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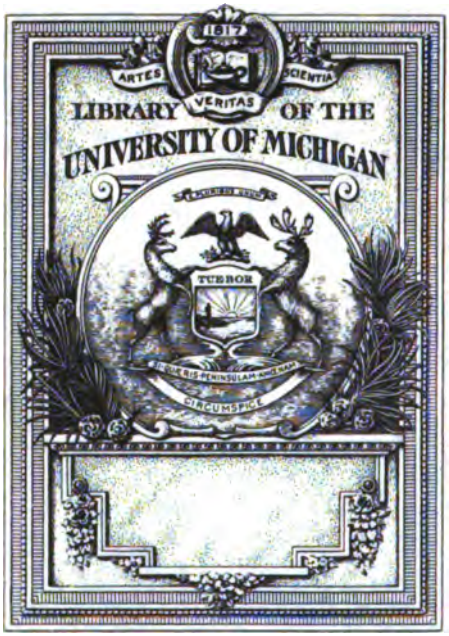

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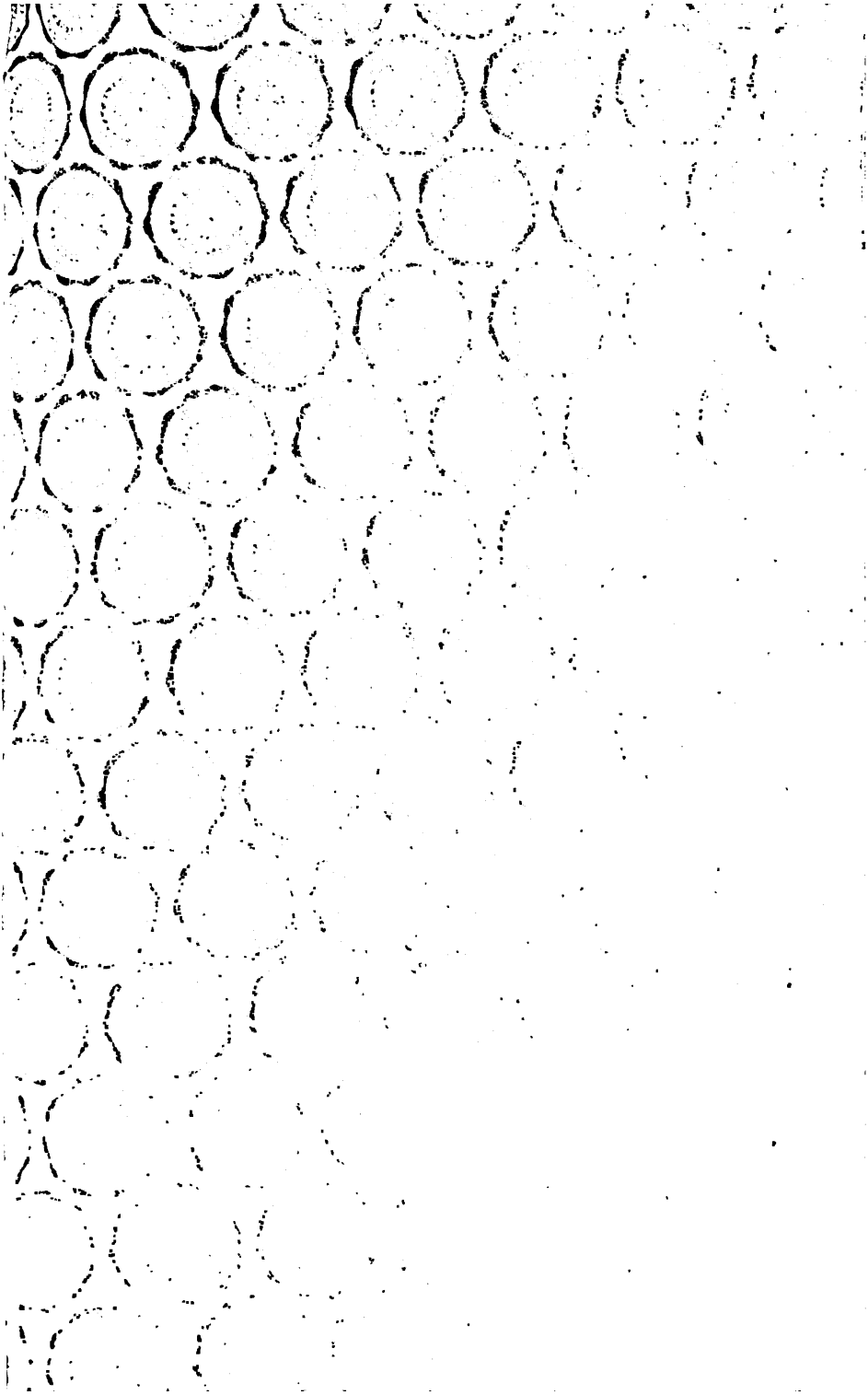

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Vol. 1
no. 1

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R89

THE

TRANSACTIONS

OF THE

ROYAL HAWAIIAN

AGRICULTURAL SOCIETY:

INCLUDING A RECORD

OF THE

PROCEEDINGS PRELIMINARY TO THE FORMATION OF THE SOCIETY, IN AUGUST, 1850.

VOL. 1. NO. 1.

HONOLULU, H. I.:
PRINTED BY HENRY M. WHITNEY:
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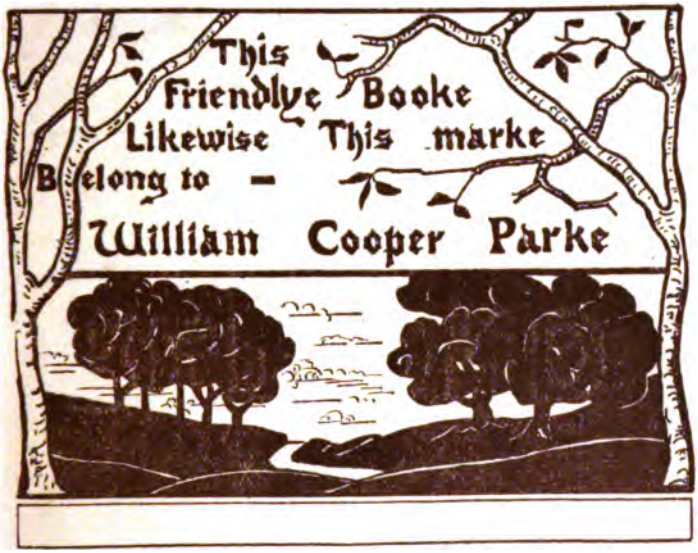
1850.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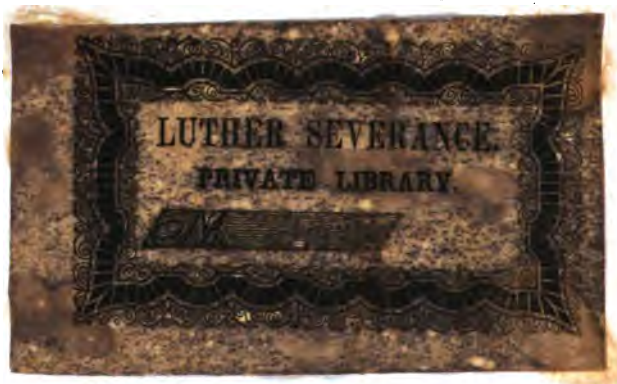
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PREFACE.

The papers presented to the public in the present No. have been collected and published in accordance with a vote of the Royal Hawaiian Agricultural Society, passed at their recent meeting.

It is due to the authors of these papers to state that they were prepared with no expectation that they would ever be printed, and simply for the benefit of the meeting at which they were read. It was, however, believed by those who then heard them that they embodied an amount of information too valuable to be locked up in the archives of the society, and they have accordingly been collected in the present form.

Should the Society be prosperous and increase in members and usefulness, as its founders confidently hope, it has been thought that its members would look back with interest to its "day of small things," and be glad to have a chronicle of the rude beginning of Hawaiian Agriculture.

PROCEEDINGS

OF

PRELIMINARY MEETING.

First Day.

Agreeably with an invitation to "all Farmers, Planters, Gardeners and other persons interested in the formation of a society for the promotion of Hawaiian Agriculture," published in the Polynesian of April 27th, a very respectable number of the residents of Honolulu, and some from other parts of the Hawaiian Kingdom, met at the Vestry Room of the Bethel Chapel, on Monday evening, April 29th, 1850.

His Honor, Judge Andrews, was called to the chair, and C. R. Bishop was appointed Secretary for the meeting.

His Honor, Judge Lee, being called upon by the Chair, stated, briefly, the object of the meeting ; said that it was a preliminary meeting, called principally for the purpose of appointing a Committee to correspond with the planters, farmers and others upon the different islands, at some future time to call a meeting of the people of all the islands, who are interested in agriculture, with a view of forming a Society, and uniting the action of those interested in the culture of the soil ; that the business of such Committee should be definitely stated, and that he considered all classes, trades and professions of residents interested in the promotion of agriculture, the consumer, as well as the producer.

Messrs. Reynolds, Newcomb, Marshall, Fuller, Damon, Armstrong, Whitney, Johnson and Castle addressed the meeting in favor of the object proposed.

On motion of Mr. Marshall, a committee of five was appointed in accordance with the suggestion of Judge Lee. The following gentlemen were placed on that committee. Wm. L. Lee, James F. B. Marshall, R. W. Wood, W. Newcomb, and Stephen Reynolds.

On motion, the committee were instructed to fix upon a time for the

general meeting at Honolulu, of the planters, farmers and others interested in agriculture, throughout the islands, and to issue a circular to be published in the newspapers, stating the objects proposed in the formation of an agricultural society, and inviting all interested in the promotion of such objects to assemble on the day fixed, and to bring with them samples of their products and animals, for exhibition. They were also instructed to solicit certain persons to prepare essays, upon the various subjects connected with agriculture, to be read at the meeting, and to procure a suitable person to deliver an address upon the occasion.

The subject of the introduction of foreign laborers, and the securing of domestic laborers was discussed at some length by Messrs. Marshall, Gower, Lee, Newcomb, Wood and others.

His Honor Judge Lee said that he had proposed an Act for the mutual protection of masters and servants, which he proposed to place in the hands of the present Legislature, to be laid before that body, for their consideration, and that with the permission of this meeting he would read the Act, hoping that the persons present better acquainted with the practical working of such an Act, might suggest many valuable amendments.

On motion, it was resolved that the meeting approve of the Act read by Judge Lee. It was also resolved that the proceedings of this meeting be published in the Honolulu newspapers.

The meeting then adjourned, *sine die*.

CIRCULAR,

(ISSUED BY THE COMMITTEE ON THE FIRST OF JUNE.)

To the friends of Agricultural Operations at the Hawaiian Islands:

At a public meeting of those persons interested in the promotion of Hawaiian Agriculture, held at Honolulu, April 20th, it was unanimously resolved that the formation of an association for the promotion and improvement of agricultural operations and products in these Islands, was highly desirable: that such an association would meet with cordial support from all classes of foreigners resident on

these Islands, and would also be encouraged and fostered by the Hawaiian Government. It was also voted that all persons interested in the subject, should be invited to assemble in Honolulu in the month of August next, for the purpose of organizing such an association, and the undersigned were chosen a committee to carry out the above design, by appointing a day for such convention, and addressing a circular to all persons interested, explaining the objects of the contemplated association, and inviting their attendance and co-operation in carrying out these objects.

The importance and almost necessity of an institution like the one contemplated is too evident to require exposition. For years past, the agricultural interests of these islands have been insignificant, and their pursuit unprofitable. With an uncertain and distant market—with little or no encouragement, or facilities given to foreign tillers of the soil, without proper knowledge of that soil,or sufficient capital to experiment upon its capabilities, most of the agricultural enterprises here have languished or utterly failed. And with the exception of a few sugar and coffee plantations, the proprietors of which have invested too much capital to be able to abandon them without heavy loss, and which were still struggling on with doubtful prospects, the whole amount of agricultural operations at these islands consisted in the raising of fruit and vegetables for the fleet of whaleships that semi-annually touched here for supplies.

Within the last two years, however, a great and sudden change has taken place in the prospects of this group. The extension of the territory and government of the United States to the borders of the Pacific,the wonderful discoveries in California, and the consequent almost instantaneous creation of a mighty state on "the western front of the American Union," has, as it were, with the wand of a magician, drawn this little group into the very focus of civilization and prosperity. We find ourselves suddenly surrounded by intelligent, enterprising neighbors, who call loudly to us to furnish of our abundance and receive in exchange of theirs. Our coffee and sugar no longer remain piled in our ware houses. Our fruits and vegetables no longer decay on the spot where they were grown. We are not even compelled to seek for them a market, but clamorous purchasers come to our very doors and carry off our supplies with an eagerness that has caused us to feel a scarcity ourselves, and we are assured that not

only for all these, but for any other products of the soil that we will raise, a ready and increasing demand may be relied on from our enterprising neighbors. The native government too, impelled by the irresistible influence and example of the Anglo Saxon energy and progress, which it sees in every direction, is relaxing its former tenacious grasp on the arable lands of the Islands, and even inviting and encouraging their cultivation by foreign skill and capital.

With these brilliant prospects suddenly opening to these Islands, let us inquire how far they are prepared to render them available. With every variety of soil, adapted to all the productions of the temperate and tropical latitudes, we find the agricultural operations of these Islands checked and embarrassed by the insufficiency of the four great requisites of capital, experience, proper implements and labor.

It is a fact worthy of remark, that, as your committee believe, without a single exception, all the plantations that have been commenced at these Islands, have been so commenced by persons possessing neither experience in the business they were undertaking, or the requisite capital and knowledge of the soil, to carry it through to a successful result.

Plantations for the growth or manufacture of silk, cotton, coffee, sugar, &c., have been commenced under such circumstances, and their failure, in some instances, is not to be wondered at, when we take into consideration such circumstances, added to the disadvantages of the *then* isolated position of this group, almost cut off from communication with the civilized world, and the knowledge, capital, proper implements, &c., so readily rendered available at home. Large sums of money have been thrown away on experiments, which the experience of persons acquainted with the business would have enabled them to avoid, and no system of intercourse between the planters has been established, by which the experience of one could be rendered available to another. And these are the great drawbacks from progress now. But few of our planters have sufficient capital to enable them to purchase the services or experience of others, and they are consequently learning by hard, expensive and slow experience themselves, and with few facilities of communication, and some may still be pursuing plans which others have found to be fruitless.

To meet these difficulties, to provide for these wants, to render the experience of other countries available to this, to supply by a com-

bined action, facilities and information to *all*, which cannot be procured by individuals, to encourage and foster agricultural operations in every form, is the main object of the proposed association. The merchant, the mechanic, the professional man, indeed, all classes of consumers are equally interested with the producer, in the prosperity of this branch of labor, and we hope to have your aid and your personal co-operation in promoting these objects.

It is proposed that the association shall subscribe for the principal standard periodicals and newspapers devoted to agriculture, and if the means of the society allow, an able editor shall be engaged for an agricultural magazine to be published at Honolulu, which shall contain such selections from these periodicals as shall be most useful or interesting to the members, and shall also contain original articles and correspondence. Your committee would also suggest for your consideration, the propriety of the establishment of an agricultural warehouse at Honolulu, for the importation and collection of such kinds of agricultural implements and machinery, plants, seeds, &c., as are most adapted to this soil and to the laborers employed. The advantages of such an establishment are obvious to all who have had any experience in the matter, as most of the implements shipped to this market by merchants who are unacquainted with its wants, are entirely unadapted to the necessities of the planters. Such a warehouse could also be a depot for the sale of the products of the various plantations and farms, the proprietors of which have not special agents at Honolulu.

The improvement of the breed of cattle, horses, swine, sheep, poultry, &c., is another great object of the society. Stated annual exhibitions could be held, and encouragement given to farmers and planters, by premiums being awarded for superior specimens of their products.

Another subject of great importance before this association is that of *Labor*. The introduction of Coolie labor from China to supply the places of the rapidly decreasing native population is a question that is already agitated among us, and should such a step become necessary, the aid of such an association in accomplishing this object would be of great benefit. All these objects, if left, as heretofore, to individual enterprise, would wholly or partially fail for want of the necessary means, but could easily be effected by an organization like that contemplated.

Having thus stated some of the objects of the proposed association, your committee most earnestly and cordially invite your presence and co-operation in the accomplishment of these objects. We have appointed as the time most convenient for the planters from other islands to assemble in Honolulu, Monday, the twelfth of August next, for the first meeting for the purpose of organization. Due notice will be given of the hour and place of meeting.

An address will be delivered on the occasion by the Hon. W. L. Lee, and it is hoped that addresses will be made by other persons. Your committee earnestly request the attendance of all who feel interested in the objects of the meeting. The statistics of agricultural operations on these islands, the capacities and nature of the soils, the experience of farmers, planters, graziers, and others on this group would prove useful and interesting topics to be brought before the meeting.

Your committee would also request that specimens of the various products of the islands, such as sugar, coffee, potatoes, indigo, arrow root, &c; be sent for exhibition at the meeting. Animals of superior breed, such as cattle, horses, sheep, poultry, &c., might be sent for exhibition, and a public sale might be made of any such that the owners might wish to dispose of. A building will be prepared for the reception of such specimens.

In conclusion your committee would again urge upon your attention the importance of the proposed association. A full attendance of all who are interested in the accomplishment of the objects of the convention is solicited; as the aid and countenance of all is needed to secure its success.

STEPHEN REYNOLDS,
W. NEWCOMB,
J. F. B. MARSHALL,
R. W. WOOD,
W. L. LEE.

PROCEEDINGS

OF

AGRICULTURAL CONVENTION.

In pursuance of the call in the foregoing circular, a Convention assembled at Mauna Kilika, Honolulu, at 3 o'clock on the 12th of August, 1850.

Mr. Reynolds from the preliminary committee, called the meeting to order, and announced that the committee had in fulfillment of the duty assigned to it, prepared the draft of a Constitution of an Agricultural Association, which they were now ready to present to the Convention.

The Convention was organized by the choice of His Honor Judge Lee as Chairman, and Mr. Bond as Secretary.

Dr. Newcomb from the Committee, read a draft of a constitution of the Hawaiian Agricultural Association.

On motion of Mr. Castle it was voted that each article of this draft be read separately, with the view to elicit discussion upon its merits, preparatory to its reference to a special committee.

The first articles were accordingly read and discussed, after which, upon motion of Mr, Marshall, it was

Voted—That a committee of one from each of the islands represented in this convention, be appointed, to whom the draft should be referred, with directions to report such amendments as seem needful at the next business meeting of the convention.

Voted—That the committee be appointed by the chair. The Chair appointed, Dr. Newcomb, Oahu,
Mr. Gower, Maui,
Mr. Rhodes, Kauai,
Mr. Hussey, Molokai,
Mr. Kenway, Hawaii.

Voted—That the Chairman of this Convention with Dr. Newcomb and Mr. Wyllie be appointed a committee to draft a code of bye-laws for the government of the association.

Mr. Reynolds of the preliminary committee gave notice that his Honor Judge Lee would, in compliance with the invitation of the committee, deliver an address upon the objects of the proposed association at 7½ o'clock P. M., at the Bethel Chapel.

The chairman announced that several gentlemen had prepared reports upon agricultural topics, which were held ready for presentation at such time as the convention should appoint for their hearing.

On motion of Dr. Wood it was voted that a committee of two from each island represented in the convention, be appointed by the chair, to draft resolutions expressive of the sense of the convention, and to report to an adjourned meeting.

The Chair appointed Dr. Wood, Mr. Marshall, Oahu; Mr. Johnson, Mr. Pease, Kauai; Mr. Torbert, Mr. Parsons, Maui; Mr. Kenway, Mr. Reynolds, Hawaii; Mr. Hussey, Molokai.

Adjourned to meet at the Bethel Chapel at 7½ o'clock, to listen to the address of Judge Lee, and to attend to such other business as time may permit.

Adjourned meeting, 7 1-2 o'clock.

Judge Lee delivered an address upon the history and importance of agriculture.

Upon motion of Dr. Wood it was voted unanimously, That the thanks of the convention be presented to His Honor Judge Lee for his admirable address, and that he be requested to furnish a copy of it for publication.

Mr. Wyllie presented an interesting report upon the progress of agricultural science, with especial reference to the action of agricultural associations.

On motion of Mr. Armstrong, it was voted—that the thanks of the Convention be presented to Mr. Wyllie, for the report, and that he be requested to furnish a copy of the same for publication.

The Chairman gave notice that there would be an exhibition of choice stock on Tuesday at 2 P. M. at Mauna Kilika.

Adjourned to meet at Mauna Kilika, on Tuesday at 3 1-2 o'clock precisely.

SECOND DAY.

Tuesday, August, 13th, 1850.

At Two o'clock the Members of the Convention assembled at Mauna

Kilika to view specimens of stock, fruits, etc, presented for exhibition.

At Four o'clock the Meeting was called to order.

The minutes of the last meeting having been read, Dr. Newcomb, Chairman of the committee to whom was referred the draft of a Constitution, reported the same again, with amendments.

CONSTITUTION.

ARTICLE 1. The name of this association shall be THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

ARTICLE 2. His Majesty the King, by Royal permission, is hereby declared to be the Patron of the Society.

ARTICLE 3. The objects of this Society shall be to foster the interests of Agriculture in all its various branches, and the Mechanical Arts; and to increase the amount of industrial productions in this group of islands.

ARTICLE 4. The officers of this Society shall be one President, six Vice Presidents, one Treasurer, one Corresponding Secretary, one Recording Secretary, an Executive Committee of five members, whose terms of service, for all these offices, shall be for one year, or until their successors are duly appointed.

ARTICLE 5. There shall be an Annual Meeting of the Society at Honolulu, or at such other place as the Society may designate, at which time, under the direction of the Executive Committee, an election for officers shall be held; which election shall be by ballot, and the persons receiving the greatest number of votes for the respective offices, shall be duly elected.

ARTICLE 6. All the Official Members shall constitute a Board of Managers; and a majority of those residing on the island of Oahu, shall constitute a quorum for the transaction of business.

ARTICLE 7. The Board of Managers shall have power to appoint agents, may purchase books, and subscribe for papers and periodicals; may institute experiments to test supposed improvements in agriculture or manufactures; may publish, or cause to be published, an agricultural journal; may cause a geological and analytical survey of the islands; may award premiums to meritorious producers, residents of the islands; may introduce foreign machines, implements, plants, seeds, etc.; shall provide for holding the Annual Meeting of the Society; and shall fill all vacancies caused by death, resignation, or otherwise,

among the officers; but shall have no power to incur indebtedness beyond the amount of funds in the treasury.

ARTICLE 8. The duties of the several officers shall be more particularly defined in the Code of By-Laws.

ARTICLE 9. It shall be the duty of the retiring President to render a report of the proceedings of the Society for the current year, and deliver, or cause to be delivered, an address at the Annual Meeting of the Society.

ARTICLE 10. It shall be the duty of the Treasurer, at the close of the current year, to present a written report, giving in detail an account of receipts and disbursements.

ARTICLE 11. It shall be the duty of the Trearurer to disburse all monies of the Society upon the order of the Chairman of the Executive Committee.

ARTICLE 12. The ordinary members of this Society shall be those who pay annually into the treasury the sum of Five Dollars, for which a certificate of membership shall be given by the President upon the presentation to him of the Treasurer's receipt.

ARTICLE 13. The Life Members of this Society shall be those who pay into the treasury at any one time the sum of Fifty Dollars, for which a certificate shall be given, as provided in Article 12.

ARTICLE 14. Life Members shall have all the rights and privileges of ordinary members, and for ever after be exempt from the payment of annual dues.

ARTICLE 15. The Board of Managers shall have power to issue certificates of membership to persons residing in foreign countries; who shall be designated Corresponding Members of the Society.

ARTICLE 16. No alteration or amendment of this Constitution shall be made but at some Annual Meeting of the Society, and by a concurrence of two-thirds of the members present at such Meeting.

The draft having been considered, article by article, and having received sundry amendments, was accepted by unanimous vote.

The Secretary was directed to receive the names of all persons who wish to become members of the association for the coming year, or for life.

Thirty-eight Annual Members, and four Life Members were reported.

The Convention adjourned, *sine die*.

The First Meeting of the Royal Hawaiian Agricultural Society was organized by the choice of Hon. W. L. LEE, as Chairman, and EDWARD P. BOND as Secretary.

Voted—That the Meeting now proceed to ballot for President of the Society, it being understood that if any individual have a majority of all the ballots cast, he shall be declared duly elected, but that if no person have a majority of all the ballots cast, the vote shall be regarded as informal, and a second balloting be required. The ballots having been collected and counted, and Judge LEE having received a majority of all the ballots cast, was declared duly elected President of the Society, and assumed the Chair in that capacity, thanking the Society for the honor conferred upon him.

Voted—That the meeting now proceed to ballot for the other officers of the Society.

The following individuals were elected.

B. PITMAN, Jun., Hawaii,
G. S. KENWAY, "
L. G. DWIGHT, Molokai,
L. L. TORBERT, Maui,
STEPHEN REYNOLDS, Oahu,
GODFREY RHODES, Kauai,
} *Vice Presidents.*

S. N. CASTLE, *Treasurer.*

R. C. WYLLIE, *Corresponding Secretary.*

RICHARD H. BOWLIN, *Recording Secretary.*

R. W. WOOD,
J. B. F. MARSHALL,
W. NEWCOMB,
E. O. HALL,
G. A. LATHROP,
} *Executive Committee.*

The Meeting adjourned to Wednesday at Ten, A. M.

EDWARD P. BOND, *Secretary.*

Third Day.

Adjourned meeting, Aug. 14, 10 A. M., President in the Chair.

The minutes of the last meeting having been read, Mr. Wyllie presented his thanks to the Society for the honor conferred in the appointment of Corresponding Secretary, but positively declined the appointment.

The Society proceeded to ballot for Corresponding Secretary.

The election resulted as follows :

Whole number of votes, 23.

E. O. Hall having more votes than any other member was declared duly elected. Mr. Hall declined the appointment.

Voted, that a committee of three be appointed by the Chair, to retire and report the name of a suitable candidate for the office of Corresponding Secretary. The Chair appointed A. W. Parsons, R. C. Wyllie and E. O. Hall.

During the absence of the committee, Mr. Marshall from the committee on resolutions, reported a series of resolutions for the discussion of the meeting, and a series of resolutions for the appointment by the Chair of committees of investigation for the ensuing year, also the draft of an address to the government upon the subject of agriculture.

RESOLUTIONS.

Whereas, the Members of the Society believe Agriculture to be the great basis of Commerce, Manufactures and all other business, and the only sure foundation of Hawaiian prosperity, it is therefore,

1. Resolved, that this Society do respectfully and earnestly entreat the Government, and all classes of individuals to lend their exertions to its promotion.

2. Resolved, That we warmly approve of the action of the last Legislature in the passage of laws improving the landed tenures of the Kingdom, and abolishing the duties on garden seeds, plants, agricultural implements, sugar mills, coffee mills, and animals introduced for the improvement of our stock.

3. Resolved, That this Society respectfully recommend to the Legislature, the adoption of efficient measures for the improvement of the public roads, and the appointment of suitable Superintendents in every district, to carry out these measures.

4. Resolved, That this Society respectfully recommend the adoption of some means to facilitate inter-island navigation, by steam vessels, and also for the improvement of Harbors.

5. Resolved, That a petition be drawn up by this Society, asking the Legislature for an annual appropriation to be distributed in premiums, and otherwise used for the promotion of Agriculture.

6. Resolved, That this Society respectfully and earnestly recommend to the Legislature, to employ some competent person, with a sufficient salary, to make a Geological and Agricultural Survey of the Islands, and compile a written report of the same, together with a report on the Natural History of the Islands.

7. Resolved, That in the opinion of this Society, one of the greatest obstacles to the success of agriculturists is the want of labor ; and that it is the duty of this Society not only to devise means for securing more labor, but for economizing what we have.

8. Resolved, That in the opinion of this Society, the importation and adoption of improved agricultural implements, would be a great saving of labor, and at the same time increase the products and profits of the husbandman ; and that a Committee be appointed whose duty it shall be to take this matter into consideration and report at our next annual meeting.

9. Resolved, That this Society earnestly recommend to the Legislature the establishment of a Public Nursery, for Plants and Fruit Trees.

10. Resolved, That a Committee of ten be appointed by the President, whose duty it shall be to collect statistics relating to the export of domestic produce and to report at our next annual meeting. *Committee*, B. Pitman, *Chairman*, G. S. Kenway, Preston Cummings, L. L. Torbert, J. T. Gower, H. S. Swinton, C. R. Bishop, F. Wundenburg, George Gilmore.

Voted, That this Committee be instructed to send in their report to Stephen Reynolds, the Vice President for Oahu, in time to enable him to present the same at the next annual meeting.

11. Resolved, That a Committee of five be appointed by the Chair, to inquire into the necessity and importance of an increased attention to Horticulture and that they report at our next annual meeting. *Committee*, Henry M. Whitney, *Chairman*, Thomas Brown, E. H. Rogers, A. B. Bates, S. C. Damon.

12. Resolved, That a committee of five be appointed by the Chair, to collect statistical facts in relation to the culture of sugar cane and the manufacture of Sugar therefrom, to report at our next annual meeting. *Committee*, R. W. Wood, *Chairman*, G. A. Lathrop, J. F. B. Marshall, A. W. Parsons, L. L. Torbert.

13. Resolved, That a Committee of five be appointed by the Chair, to collect statistical facts in relation to the growth of Coffee, and to make such suggestions for its promotion and improvement as to them may seem proper, and to report at our next meeting. *Committee*, T. C. B. Rooke, *Chairman*, G. Rhodes, B. Pitman, Antonio Catiline, A. Archer.

14. Resolved, That a Committee of three be appointed by the Chair to devise means for procuring more labor, and also for economising what we have, to report at our next annual meeting. *Committee*, J. F. B. Marshall, *Chairman*, R. W. Wood, Stephen Reynolds.

15. Resolved, That a Committee of three be appointed by the Chair to procure, as far as possible, an analysis of our soils, with other geological knowledge interesting to agriculturists, to report at our next annual meeting. *Committee*, W. H. Pease, *Chairman*, W. Newcomb, T. C. B. Rooke.

16. Resolved, That a Committee of three be appointed by the Chair, to collect facts in regard to the history and habits of the cutworm, and other destructive insects and vermin, to their ravages on our crops, and to the best means, if any are known of preventing their depredations, and to report at our next annual meeting. *Committee*, L. Andrews, *Chairman*, J. T. Gower, W. H. Pease.

17. Resolved, That a Committee of three be appointed by the Chair, to enquire into the condition of our roads, harbors, and inter-island navigation, to suggest improvements therefor, and to report to our next annual meeting. *Committee*, T. Metcalf, *Chairman*, G. M. Robertson, R. C. Wyllie.

18. Resolved, That a Committee of four be appointed to make enquiries in reference to implements and to devise means for procuring the same, to report at our next annual meeting. *Committee*, R. Armstrong, *Chairman*, C. W. Vincent, W. H. Rice, Robert C. Janion.

19. Resolved, That Committees be appointed by the Chair whose business it shall be to report at the next annual meeting, the progress of improvement in *Neat Stock*, *Horses*, *Sheep*, *Swine*, and *Poultry*, to-

gether with any information they may be able to obtain, interesting to the agricultural interest generally, relating to these subjects.

Committee on Neat Cattle, John Meek, *Chairman,* C. G. Hopkins, Henry Sea.

Committee on Horses, Thomas Cummings, *Chairman,* Samuel Thompson, John Meek.

Committee on Sheep, George S. Kenway, *Chairman,* Thomas Cummings, Thomas Brown.

Committee on Swine, Thomas Brown, *Chairman,* A. Paki, George Gilmore.

Committee on Poultry, E. H. Rogers, *Chairman,* Paul Manini, Thos. Brown.

20. Resolved, That the King and Privy Council be requested to carry into effect the Act of the last Legislature in regard to post offices and mail communication between the Islands by promulgation according to the provisions of that act.

21. Resolved that an auxiliary Committee of one from each Island be appointed to communicate statistics in regard to labor. *Committee,* B. Pitman, *Chairman,* L. L. Torbert, S. G. Dwight, G. Rhodes.

Committee on Seasons, J. S. Emerson, *Chairman,* J. S. Green, E. Bond, H. R. Hichcock, J. W. Smith.

Committee on Fences, Wm. Miller, Esq., *Chairman,* E. Johnson, R. G. Davis, H. A. Pierce.

Committee on Trees and Grasses, Mr. Duncan, *Chairman,* E. Bailey, W. H. Pease, H. M. Whitney, G. P. Judd.

22. Resolved, That a Committee of three be appointed to enquire respecting garden seeds and fruits, and to obtain varieties of the same, and to report at our next annual meeting. *Committee,* Rev. S. C. Damon, *Chairman,* A. Adams, Rev. D. Baldwin.

The committee upon nominations of Corresponding Secretary presented their report.

Voted, that we proceed to the election of Corresponding Secretary. The result was as follows: whole number of ballots, 25.

Edward P. Bond having a majority of all the votes cast was declared duly elected. The report of the committee on resolutions was accepted.

EVENING SESSION, 14th.

The Society met pursuant to adjournment, the President in the Chair.

On motion of Mr. J. F. B. Marshall, the petition of the Committee to the Hawaiian Government was read.

To the House of Nobles and Representatives of the Hawaiian Islands.

The Petition of the undersigned members of the Royal Hawaiian Agricultural Society, respectfully represents:

That in their opinion Agriculture is the main reliance of the Kingdom; that upon the products of the soil all classes must depend for subsistence and wealth; that it is the great fountain of physical and moral health to every nation; and that upon its encouragement and increase the fate of the People greatly depends:

That indolence is the besetting sin of the land; that nothing can save the nation from destruction but increased labor in cultivating the soil: and that hence, it is of the first importance that no effort should be spared, of which the Legislature is capable, to stimulate industry and promote rural labors:

That the wasting state of the nation and the scarcity and high price of our Agricultural products, are such evils as to cause the profoundest sorrow and awaken the most earnest attention of our Legislators, who are the constituted guardians of the Public weal:

That they have viewed with the liveliest emotions of satisfaction and gratitude the recent acts of the Legislature, granting to the common People their lands in fee-simple,—throwing open the waste acres of the Kingdom to the industry, skill and capital of foreigners, and abolishing all duties on plants, garden seeds, agricultural implements and animals:

That they trust the good work so well begun will be prosecuted to a successful end, and the fostering aid of the Government be extended in every direction that gives the least promise of adding to the resources of the country, or restoring health to the nation:

That one of the means of awakening industry and improvement in cultivating the soil, which has been practiced with success in other countries, has been the bestowment of pecuniary rewards and honorary distinctions; and that believing the same means would be blessed with the like result in this country,

We would respectfully recommend to the Legislature the appropria-

tion of a permanent fund, which shall yield at least an annual interest of one thousand dollars, to be distributed in premiums, or otherwise, as may best promote the interest of husbandry, and to be regulated and restricted in such a manner as to your Honorable Body may seem just and proper.

On motion of J. T. Gower the petition was adopted.

On motion of Mr. Hall a Committee of one was appointed to present the petition to the Legislature.

The Chair appointed Mr. Armstrong, said Committee.

Essays were read by the following gentlemen : Stephen Reynolds, H. M. Whitney, Rev. E. Johnson, W. H. Pease.

Also letters from Thos. Miller, of Hilo, and Rev. T. E. Tayler of Lahaina.

On motion of Mr. Bond, a vote of thanks was returned to those gentlemen who prepared and read Essays to the Society, and copies requested for the archives of this Society.

Messrs. Parsons and Torbert presented verbal statements of the extent of agricultural productions of the Island of Maui.

On motion of Mr. Bond—voted, that the thanks of the society be presented to Messrs. Parsons and Torbert, for their interesting reports, and that they be requested to reduce the same to writing, that they may be deposited with the permanent documents of the Society.

Adjourned to Thursday at 9½ A. M.

Fourth Day.

Adjourned meeting, August 15—10 A. M.

The Recording Secretary being absent, the minutes of the last meeting were read by the Corresponding Secretary.

The Chairman announced that Gen. Wm. Miller had requested that his name might be recorded as a Life Member of the Society.

On motion of Mr. Hall—Voted, that Gen. Miller be added to the Committee on Fences, and that he be requested to act as Chairman of that Committee.

On motion of Mr. Armstrong—Voted, that the natives throughout the Islands, be invited to co-operate with this Society in carrying out its designs, and that a committee of one from each of the large Islands, be appointed to propose to them the formation of Societies auxiliary to this, and to aid them in their formation, and that all Missionaries

throughout the Islands be requested to aid the committee in the formation of these auxilliary societies.

On motion of Mr. Marshall—Voted, that the chairman of the same Committee be instructed to issue a circular to the native population inviting them to unite with this society, or to co-operate with it through auxilliary associations.

The Chair appointed Messrs. R. Armstrong, J. S. Green, Titus Coan, H. R. Hitchcock, G. B. Rowell.

On motion of Mr. Armstrong—Voted, that a Committee of five be appointed by the Chair, to report at the next annual meeting upon the subject of Trees and Grasses. The Chair appointed Messrs. Duncan, Bailey, Pease, Whitney, and Judd.

On motion of Mr. Parsons—Voted, that a Committee of three be appointed by the Chair to report at the next annual meeting upon the subject of food for laborers. The Chair appointed Messrs. A. W. Parsons, R. W. Wood, and J. S. Emerson.

The President read a letter from Robert C. Janion, Esq., requesting that his name might be recorded as a Life Member of the Society.

On motion of Mr. Castle, it was Voted, that Mr. Janion be added to the Committee on Agricultural Implements.

The President read a communication from Mr. G. M. Robertson on the culture of the Grape and of Tobacco.

On motion of Mr. Castle—Voted, that the thanks of the Society be presented to Mr. Robertson for his communication, and that a copy be requested to be placed with the permanent documents of the Society.

Dr. Wood read a communication upon the history of the culture of the sugar cane.

On motion of Mr. Castle, it was voted that the thanks of this Society be presented to Dr. Wood for his communication, and that a copy be requested to be placed among the permanent documents of the Society.

Individuals recommended as corresponding members.

By Judge Lee—Dr. Johnson, of Tahiti, Hon. Daniel Lee, of Geo. United States.

By Rev. S. C. Damon—Wm. Hooper, Esq., San Francisco.

By R. H. Bowlin—Hon. T. Ewbank, Commissioner of Patents, Washington, U. S.

On motion, is was—Voted, that the transactions of this Society be published annually in periodical form, and that Rev. Sam'l C.

Damon, E. Bond, Corresponding Secretary, and R. H. Bowlin, Recording Secretary, be appointed a committee to carry into effect the foregoing resolution this year.

The Society then took up the subject of importing foreign labor which elicited a spirited discussion, in which Messrs. Lee, Gower, Castle, Hall, Parsons and others participated.

Adjourned to 3 P. M.

EVENING SESSION—August 15, 3 P. M.

The minutes of the last meeting were read and approved.

The subject of importing foreign labor was again taken up and a long and interesting discussion ensued, during which many practical hints were thrown out. The subject was finally laid over.

On motion—Resolved, the thanks of this Society be tendered the Government for the use of the building in which it met.

On motion of Mr. Hall—Resolved, that Messrs. Armstrong and Clark be requested to publish the proceedings of this Society in the native language.

On motion of Mr. Castle—Resolved, that the Editors of the Polynesian, Times, Elele and Friend be requested to publish the proceedings of this Society in their respective papers.

On motion of Mr. Hall—Resolved, that the Vice Presidents on their respective Islands be requested to use their best exertions to secure members to the Society.

Resolved—That when we do adjourn, we adjourn to meet again on the 2nd Monday in August, 1851.

On motion—Resolved, that the thanks of the Society be presented to the following individuals, for the exhibition of specimens of stock, vegetables, fruit, &c.

John Meek, Samuel Thompson, H. A. Pierce & Co., A. Paki, Paul Manini, James F. B. Marshall, Mrs. Ladd, Alexander Adams, John C. Jones, R. W. Wood, J. T. Gower, L. L. Torbert, H. M. Whitney

On motion, adjourned.

ADDRESS.

Delivered by WM. L. LEE, ESQ.

This is no common gathering. In a small Island of the Pacific, which thirty years ago was buried in the darkness of heathenism and scarcely known to the most civilized portions of the earth, in a country whose uplands were then slumbering in the almost unbroken rest of ages, and whose lowlands knew little culture but that of the kalo patch, there has this day assembled the planter who counts his hundreds of acres of sugar cane and coffee trees—the farmer raising cargoes of vegetables for California,—and the herdsman who gathers in his folds a thousand cattle. Indeed this is no every day assemblage. Who in the days of the distinguished discoverer of these islands,—of the great and good Vancouver, or in the still later times of the arrival of the American Missionaries on these then savage shores, would have dared to predict that in the year of our Lord one thousand eight hundred and fifty, there would gather in these ends of the earth, from Europe and from Asia—from North and South America—from Old England and from New England, such a body as we now see! Who at that time would have staked his reputation on such a prophesy? Verily, my friends, I hail this assemblage with joy! I hail it, if it prove successful in the objects for which we have come together, as the dawn of a new era in the history of the Sandwich Islands. I hail it as an advancing step towards the thorough civilization of the Hawaiian race and the security of its national prosperity and independence. An advancing step, I say; for great as is the contrast presented to us between the present and thirty years ago, in the view we have just taken, I venture to predict that those who shall fill our places thirty years hence, will see a far greater one between that time and the year 1850. They will see our vallies blooming with coffee and fruit trees—our barren hill-sides waving with luxuriant cane fields—our worthless plains irrigated and fruitful, and the grass huts now scattered over our land replaced by comfortable farm houses. This is the day of small things in the agriculture of the Hawaiian Islands, but by no means is it a day to be despised. Let us improve it by doing a work not to be forgotten when

we are gone. By forming an institution to be perpetuated by its blessings, and for which the generations to come will remember us with gratitde.

I propose to spend the time allotted me on this occasion in a few remarks on the necessity for and the objects of the Society proposed; and then pass to the consideration of the dignity and importance of agriculture, and the necessity for its encouragement as a source of national prosperity and independence.

The necessity for the formation of an Agricultural Association in these Islands is too obvious to need more than a word. The cultivators of the soil, scattered as they are from Kau to Waioli, points, which, owing to the slow and uncertain movements of our inter-island navigation, are more distant from each other than England and the United States, with little or no opportunity of communicating with each other, live bound to their fields, in ignorance of their co-workers on other islands—in ignorance of each others advantages and disadvantages, improvements or wants, and with many of their best sympathies dwarfed and dormant. This is clearly wrong, and there exists an imperative necessity for reform. The agricultural interests of this group stand pre-eminent in importance, and its Representatives should at least meet once a year to aid in their promotion. To prosper, the farmers of this Kingdom need what they have never had, namely, an organization. One which shall bring them acquainted with each other's improvements, and means of procuring, securing and economising labor. One which shall give them a community of feeling—a singleness of purpose, and concert of action. One which shall serve as a head—a *well regulated* head, by which their operations may be guided, and through which they may speak as with the voice of one man. To supply these wants, is one of the great objects of the proposed association. It has other objects not less important, among which, are the promotion of friendly and social intercourse,—the mutual bestowment of assistance and the interchange of kind offices,—the awakening of a spirit of industry and frugality; and the diffusion of light and knowledge throughout the Islands in relation to every branch of agriculture. Nor is this the end of benefits expected to flow from this association. It is intended by the judicious distribution of premiums, to arouse the people to a laudable ambition in the growth of finer and larger crops, the introduction of new seeds, plants, and better agricultural implements, the importation of new breeds of cattle and the improvements of those

we have, and the discovery of some means for the effectual destruction of the various insects and vermin which at certain seasons of the year sweep over portions of the group like the locusts of Egypt, destroying every green thing.

Having briefly stated the necessity for, and some of the principal objects of, the proposed society, I shall now proceed to address you upon *the dignity and importance of agriculture, and the necessity for its encouragement as a means of national prosperity and independence.*

Of all the occupations of man, agriculture stands first in importance and second to none in dignity. I would not follow the error so common with public speakers, of attaching undue importance to the subject under consideration, but I do feel, that in the assertion I have just made, I am upheld by the universal voice of history, of the ablest writers on political economy, and the observation of every day life. Agriculture is the original source of all wealth and prosperity. It supplies our food and raiment. It gives us life, health and strength. Its productions furnish the materials for the labors of the manufacturer, and in turn freight the bark of commerce. In a word, it is the basis of all other arts—the great substratum upon which rests every other interest, individual and national. It is the most ancient and most sacred of all employments. We read in the Holy Scriptures, "And the Lord God planted a garden eastward in Eden: and there he put the man whom he had formed." "And the Lord God took the man, and put him into the garden of Eden, *to dress it and to keep it.* After the fall of Adam, we read, "The Lord God sent him forth from the garden of Eden, "*to till the ground from whence he was taken.*" It is clear then, from the highest of all authority, the Bible itself, that the great Creator made man a farmer; and that all other avocations are secondary in rank to that of agriculture. Being the first labor commanded of Heaven it is the most dignified, honorable and important. Its seniority and divine origin entitle it not only to our reverence and respect, but to our highest consideration among the arts, of which it is the common parent.

From the day of Adam to the present time the culture of the soil has held its high position in every civilized country. Among the Israelites it stood first in rank, with the Persians it was rewarded with royal favor, and among the Chinese, the most populous, one of the most ancient and in many respects the most civilized of the nations of the

globe, it has ever commanded alike the adoration of the "Sole Guardian of the Earth," and his four hundred millions of subjects. The annual ceremonial by which the emperor of China manifests his respect for agriculture, is probably familiar to you all. Surrounded by his principal officers, he prostrates himself upon the earth, and invokes the blessing of the God of Heaven upon the labors of himself and of his people. As the high priest of the Empire, he then sacrifices a bullock, and while the altar is still smoking, he lays aside his imperial robes, puts his hands to the plough, and opens several furrows over the whole field. After the Mandarins have followed his example, presents are distributed to the peasantry, and the festivities close, to be again renewed when the Emperor comes to sow the seed. A noble tribute this to one of the noblest pursuits of man! In no country, perhaps, is agriculture so honored, dignified and nurtured as in China. Certainly in no other is its astonishing power as a sustainer of human life and the support of a nation so strikingly illustrated. Its crowded population, which has little or no other source of subsistence, has pushed it to the highest state of perfection, and necessity, ever fertile in invention, has furnished it with means of inducing and perpetuating the fertility of the earth, which to the most enlightened agriculturists of the present day is a matter of astonishment. Not a rood of ground, that can be made to produce the most unimportant crop is suffered to run to waste. The steepest hill-sides and most precipitous mountains are cut into terraces and cultivated to their very tops. The rivers that flow along their bases are taken from their beds—carried to commanding heights, and made to trickle down their barren sides to beautify, enrich, and bless the earth. There alone in all the globe the soil is never let to rest. From age to age not an acre of its five millions of square miles is permitted to lie idle, and the same land which for thousands of years has been yielding from two to three crops annually, is by a judicious system of manuring made to retain its pristine vigor.

The revenue of China, which is estimated at upwards of $150,000,000, consists chiefly in productions of the soil; and well may Agriculture be honored, in a land where she takes up its dusty atoms, transmutes them into her powerful alembic, and pours them into its treasury, a stream of moulten gold.

In Egypt, once the very centre of civilization, and even in its ruins the land of wonder to the philosopher and endless research to the

scholar, agriculture was an object of especial devotion. In such estimation was it held by the Egyptians that they ascribed its invention to the Gods,—deified the Nile as the fertilizer of their soil; and worshipped the ox for his services in the field. Though Egypt has ever been for the most part an arid waste covered with burning sands, yet the overflowings of the Nile, united with the industry of her inhabitants, earned for her the reputation of being the granary of the world. Even in her present desolation, her Copts and Arabs supply their Turkish masters with grain.

In Greece, agriculture was never cherished to the same extent that it was among the other great nations of ancient times. This was partly owing to the sterility of her soil, and in part, no doubt, to her prosecuting the labors of the husbandman by means of slaves. Still it was honored by the poetic genius of Hesiod, and by the writings and lectures of Xenophen.

Rome venerated the plow, and her noblest sons followed in its furrows. Her pride, her strength, her wealth and chief glory lay in her agriculture; and from the time of Numa, when to neglect the cultivation of a farm was an offense punishable by the chastisement of the censor, to the decline of the Empire, her senators and magistrates, her most distinguished statesmen and generals, were often found tilling the soil with their own hands. Farmers filled the ranks of her invincible legions, and to this fact it is probably owing, that wherever Rome carried conquest, instead of burning and devastating the vanquished countries, she caused them to smile with the peaceful fruits of the husbandman. The Roman Eagle was almost the sure omen of victory, but upon his wings was borne the promise of human advancement and prosperity. Good roads were made; property protected; the products of the soil increased; towns and cities built; and the conquered provinces were made to teem with a beauty and luxuriance scarcely second to that of Italy herself. Even at the present day there is no country that exhibits such a diversity of culture as Italy, and none, except it be China or Flanders, that exceeds it in fertility. Weak, distracted and despised as Italy now is, she preserves in the character of her agriculture, a faint ray of the glory of that splendid empire of which she was once the centre.

In Carthage, the illustrious rival of Rome, the cultivation of the soi was one of the chief subjects of attention. Agriculture was the prin-

cipal source of her revenues; and her great generals thought it not beneath their dignity to make themselves master of all its rules, both by study and by practice. Such was the esteem in which agriculture was held by the ancients. For nearly four thousand years it was the fountain of life and power to the most renowned and civilized nations of olden times.

Through the dark ages agriculture languished. The labors of the husbandman were swept away with the torrent of blood and carnage that followed in the train of the Goth and Vandal, and died amid the desolation of provinces, the groans of slaughtered millions, and the shock of falling empires. There was no incentive for the farmer to sow and plant, for he felt no certainty that the harvest would not be gathered by some new invader. With the revival of letters and the bursting forth of that pure flame of civil and religious liberty which shone with such glory in the Reformation, Agriculture, in common with the other arts, awakened from her long slumber, and again took up her march of joy and gladness to the depressed and starving nations. From this time, the art of improving the soil advanced slowly but surely, yet it can hardly be said to have regained the height it occupied in the days of the Romans until the middle of the eighteenth century.

At the present day it has attained to a high degree of improvement, and is constantly growing in dignity and importance. The numerous societies which have been formed for its promotion in Europe and America have given it an impulse which seems to promise a progress and development in the science hardly conceivable. In Germany, France, and other parts of Continental Europe, schools have been established for its promotion, and it is receiving the attention of chemists and other men of science; but in no country has it reached that distinction which it possesses in England. British Agriculture, is undoubtedly more scientific and instructive, than any other in the world. It is the great interest of that Kingdom, and one which is watched over with a vigilance that never sleeps. So great is it, that until very recently it has been able to shut the door against the admission of foreign bread stuffs, and by means of its corn laws to create a complete monopoly of British grains, even at the expense of dear bread to the great body of the people. The agricultural interests of Great Britain are in the hands of her nobility, the principal landed proprietors of the Kingdom, and the eminence which it has attained, is owing in no small degree to their exertions in the formation of Boards and Societies for

its advancement. Perhaps no part of the United Kingdom has felt the influence of these societies to a greater degree, and exhibited so rapid an improvement in agriculture during the last half century as Scotland. Naturally one of the most sterile and inhospitable of countries in soil and climate, it has become, under the hands of her industrious and educated farmers, one of the most fertile and generous. The change which has been wrought in the face of that country within the last fifty years, is said to be almost miraculous. Whole districts, once more desolate than the mountains of Hawaii, have been made to blossom as the rose. The change in England, according to Macaulay, is hardly less wonderful. Great Britain is estimated to produce annually between 350 and 400 millions of bushels of grain, and her agriculture is not only of vital interest to the twenty-seven millions of inhabitants, whom it feeds, but a matter of no small moment to the whole civilized world. Daniel Webster, that distinguished American statesman and farmer, remarked more than ten years ago, that, "should there be a frost in England fifteen days later than usual,—should there be an unreasonable drought or ten cold or wet days, instead of ten warm or dry ones, when the harvest should be reaped,—every exchange in Europe and America felt the consequence of it." The truth of that remark has been fearfully demonstrated by the potato rot of Ireland. The decay of a single vegetable has been the starvation of thousands, and has agitated to its remotest extremeties the commerce and business of the four quarters of the globe. A short crop in England produces almost as great a sensation in the United States as in England itself; for the vacuum produced, must be supplied mainly by the surplus products of America. It is well known that within the last few years, owing to the failure of crops in Great Britain, the United States has transported an immense amount of agricultural produce to her shores, feeding the starving with her bounty, and realizing enormous profits from her sales.

In the United States the agricultural interest has always been in the ascendency; and her farm houses have ever been the nurseries of her best and most distinguished citizens, from the days of the immortal farmer of Mount Vernon, down to those of the honored husbandmen of Marshfield and of Ashland—of Lindenwald and of North Bend. Five sixths of her entire population are said to be engaged in the labors of the field, and the products of her soil for the last year have been esti-

mated at upwards of 1000 millions of dollars. It is true that agriculture has not attained to that perfection in the United States which it has reached in England, but this is owing not to any want of effort for its promotion, but rather, if I may so speak, to the want of *necessity*. In the United States every man may become the proprietor of a large estate, which he need only half till to be independent of want. In England it is far different. There no soil must lie idle or be partially tilled; for upon his little field depends not only the farmer's subsistence, but his ability to meet his rent. American agriculture has the sweep of almost endless territory, and knows no limits but the demand for its products. The farmer of America may almost say—

> "No pent up Utica contracts our powers,
> For the whole boundless Continent is ours."

The importance of agriculture and the necessity for its encouragement as a means of national prosperity must be obvious to all. The culture of the soil lies at the bottom of all culture, mental, moral and physical. In every country has it been coeval and inseparably connected with civilization. The dawn of one is the birth of the other. Check one and the other languishes; divide them, and both die. It is an axiom of history too plain to admit the question, that until the savage abandons his roaming, hunting, and fishing, and laying aside his vagrant habits, confines himself to some fixed abode and improves the soil, he can never become a civilized being. Like every other wild animal, before man can be tamed, or civilized, if you please, you must confine him to some local habitation and gather around him the attachments of place and home. I repeat what I have already said, that it is agriculture that civilizes a nation—it is agriculture that feeds a nation—it is agriculture that clothes a nation, and it cannot be denied, that that which civilizes, feeds, and clothes us, must be regarded as the chief pillar in the temple of national prosperity.

England, great as she is in her manufactures, and justly proud as she is of that commerce whose giant arms bind the globe in her embrace, would be weak indeed, if deprived of the productive power of her soil. Agriculture is the *body* of which manufactures and commerce are but the *members*. Both the latter may be lopped off without destruction to the former; but touch the heart of agriculture and it is death to all. As in England, so is it in the United States. She looks

to the surplus products of her soil to furnish materials for her Lowells and her Manchesters, and commodities to freight her ships for trade with foreign countries. So is it in every great country ; and so, if we would prosper, must it be here. Until we produce more than we consume,—until our surplus produce afford an export exceeding what we import, we can make no advance in wealth or prosperity. In all countries the products of the earth, and the animals it sustains form the main reliance of the state. Mines of gold and silver richer than those of California may fail, or the poor digger starve while groaning under the weight of his hard earned treasure, but the well cultivated field and abundant harvest are an exhaustless mine, and are sure to close the door against want, and fill the land with comfort and plenty.

Again, agriculture is the source of physical and moral health. It is the salt of the earth that gives a nation vigor and strength and preserves its moral from taint and corruption. It is true beyond dispute, that the culture of the soil is the most natural and healthy of all labors. It is to the farm we must look for vigorous bodies and stalwart arms ; and in every country which has an agricultural class, that class forms the bone and muscle of the nation, on which she relies as the great bulwark of her strength. That those who are steadily engaged in the labors of the field have sounder bodies and firmer health—that they are less liable to sickness, and less apt to die when sick, than others, is a truth which has been fully demonstrated in these Islands during the last two years. While the measles and whooping cough were ravaging whole districts and carrying death to nearly every dwelling, the laborers on plantations passed almost unscathed. On the plantation of Mr. Torbert, which employs upwards of forty hands, there was not a single death, and on that of Mr. Rhodes, which employs an equal number, there was but one. To what is this marked difference owing ? Undoubtedly much is due to the superior care received by the sick on plantations ; but is it not mainly owing to the superior health induced by steady labor in tilling the soil ?

I have said is is not only the source of physical but of moral health to a nation. So it is. In every country where man is not reduced to a slave, those engaged in rural labors are the most moral and religious. It is natural it should be so. The husbandman, removed from the giddy pleasures and vices of the town, sows and plants, and looks up to God to bless the labor of his hands. "For all his peculiar blessings

he is invited to look immediately to the bounty of Heaven. No secondary cause stands between him and his Maker. To him are essential the regular successions of the season, the timely fall of the rain, the genial warmth of the sun, the sure productiveness of the soil, and the certain operations of those laws of nature which must appear to him nothing less than the varied exertions of omnipresent energy. In the country we seem to stand in the midst of the great theater of God's power, and we feel an unusual proximity to our Creator."

Farmers, and by this term I do not mean the serfs of Russia—the vassals of an absent lord, or the hired laborers of a great planter, but those who own a portion of the soil and till it, are of all classes the most moral, contented and independent. They love order and peace, and are not willing to jeopardize all the comforts and enjoyments that cluster around their rural homes, by promoting popular tumult.

In my opinion agriculture is a matter which has been too much overlooked in the Sandwich Islands. That so little has been done towards its promotion, is, at the first glance, a matter of astonishment to all. But when we strike beneath the surface of things, and examine the tenure by which the people have held their lands, and the little protection they have had for the products of those lands, our wonder vanishes. Until within the last year the Hawaiian held his land as a mere tenant at sufferance, subject to be dispossessed at any time it might suit the will or caprice of his chief or that of his oppressive *luna*. Of what avail was it to the common people to raise more than enough to supply the immediate wants of their subsistence? Would the surplus belong to them, or afford the means of future independence? Far from it. It would go to add to the stores of their despotic lords who claimed an absolute right in all their property, and who periodically sent forth their hordes of *lunas* to scour the country and plunder the people without the shadow of right or mercy. Often did these ravagers —these *Land Pirates*, leave the poor *makaaina* with little else than his maro, his digger and his calabash! With such a tenure to their lands, and with such protection, or rather want of protection for their products, what could be expected of agriculture or the people? I thank God that these things are at an end, and that the poor *kanaka* may now stand on the border of his little kalo patch, and holding his fee simple patent in his hand, bid defiance to the world! Yes, I thank God that he has moved the hearts of the King and Chiefs of

these islands to let the oppressed to free! The granting of Royal Patents in fee simple to the common people for their lands is the brightest jewel that adorns the crown of Kamehameha III., and will shine with increasing lustre long after his body shall have mouldered to its mother earth!

The agricultural prosperity of a country is greatly dependent upon its landed tenures; and it has been justly remarked, that "give a man a barren rock in fee simple, and he will soon make it a garden; give him a garden with an insecure title and he will soon convert it into a desert." The social and political condition of a country also depends in no small measure upon its landed tenures. So true is this, that when we seek to know the state of a nation, one of the most important questions to be asked is, *by what title do the people hold their lands?* Let the peasant hold his land at the will of another, and he is a serf; give it to him in fee simple, and he is a *man!*—an independent, a better, a more useful man.

Perhaps there is no country in the world that offers greater promise to the husbandman and grazier, at the present time, than the Sandwich Islands. The lands are now thrown open to all classes, the native and foreigner, the subject and alien. We have a climate unparalleled in its salubrity, and affording every variety from the perpetual snows of Mauna Kea to the burning plains of Waikiki. Our soil though not deep, is warm, quick and fertile. We have no great extent of arable land, but I suppose out of the four millions of acres, at which the area of the islands has been computed, in round numbers, it would be a fair estimate to say that one eighth, or 500,000 acres, are fit for the plow, and 2,000,000 of acres will afford good pasturage. What a fund of wealth lies hid in the slumbering energies of those 2,500,000 acres! Enough to feed five millions of inhabitants, and load a hundred first class ships annually with our surplus produce. Besides a fine climate and good soil, we are free from taxation on our land, and in California and Oregon we have an unlimited market. A market too, which, owing to our proximity to those countries, will enable us to take advantage of every favorable turn it presents, and obtain larger prices for our great staples of sugar and coffee than traders from any part of the world. Let us be awake to these advantages.

There is one agent, however, that we require, who holds the key to success,—the great brawny-armed, huge-fisted giant called LABOR. We must not only secure him, but direct, aid, and economise his ef-

forts; for though with his strong arm and heavy hand he is mighty to accomplish, yet unguided by the art of man he strikes like the blinded Cyclops of old, destroying with one blow what he effects with another.

We may not have sufficient labor, we have not, but do we improve what we have? Do we economise it as we ought, by studying the nature of our soil and plants, and the amount of labor necessary for them? Are we making such improvements as we ought in our modes and implements of culture? Let us look back upon the history of our agriculture and see what advance we have made. What more do we know of sugar cane and coffee, their growth and manufacture, than we knew at the opening of the first sugar plantation at Koloa, or the first coffee plantation in Manoa? Doubtless we have made some advance, but far less than we ought. Depend upon it, until we bestow more study upon our soil, plants, and modes of culture, and seek to economise labor more than we do, we shall never meet with success.

It is an old adage that, "the man who causes two ears of corn or two blades of grass to grow, where only one grew before, is a public benefactor;" and if ever a field was open for acquiring such a reputation, it is here in the Sandwich Islands. If what I have said be true,—if agriculture *does* lie at the bottom of all other interests of this kingdom,—if it *is* the source of life and wealth to a nation, and the only sure foundation of its prosperity, then it is our duty to spare no effort for its promotion. And not only is this great duty incumbent on us as individuals, but upon the government, as the chief guardian of the nation's welfare. I know much has been done by the last Legislature towards encouraging agriculture, by granting the natives their lands in fee simple,—by throwing open our waste acres to the skill, industry, and capital of foreigners, and by the abolition of all duties on agricultural implements, garden seeds, and cattle introduced to improve our stock; but much yet remains undone. Government could, and I believe will, afford an important aid:

First—By making good public roads and bridges, both of which are so essential to the agricultural prosperity of a country. By a judicious system of internal improvement, cultivation would be extended to thousands of acres now waste, and the productive territory of the kingdom be constantly increased.

Secondly—By improving our harbors, and facilitating communication between the islands by the introduction of small steamers.

Thirdly—By the importation of new seeds and plants adapted to the climate of these islands, and improved agricultural implements.

Fourthly—By the annual appropriation of a small sum to be distributed in premiums for the improvement of our cattle and crops; and also for the discovery of some means for destroying the cut worm and other insects so fatal to many of our best plants.

Fifthly—By collecting and diffusing practical knowledge adapted to the agriculture of these islands.

It is contended by some that the best way of encouraging agriculture is to *let it alone*. But this *let alone* system, I fear, has been practiced in these islands too long. We have seen its evil effects, and the general condemnation it receives calls for a speedy change. I am fully convinced, that the encouragement of agriculture is the last ray of hope left for the Hawaiian nation. Agriculture has been *let alone*, and the people's rights so long withheld, that now when the dark cloud which has lowered upon them for ages is lifting, there is hardly a nation to save. Alas, and must this people possessed of so many kind and generous traits perish from the face of the earth! Perish too, not by famine, nor pestilence, nor the sword, but by the rust of indolence—the canker of sloth. Must they die! Will we let them die, without making one struggle to save them from the grave to which they are hastening! No, my friends, justice and humanity forbid! Let us not forget that the soil whose treasures we would unlock, was once the undisputed heritage of the poor Hawaiian, and let us remember too, that though the white man bore the glad tidings of salvation to his wondering ear, he planted in his veins the seeds of disease from which the great reaper Death has gathered full many a harvest. Though but a lone remnant remains, let us strive to gird it with strength to wrestle with its approaching destiny—to arm it with the healthy body and vigorous frame, the only weapons that can stay the hand of the Destroyer. Then, if our efforts to send a quickening life pulse through the heart of the wasting nation avail not, we can but commend it to Him in whose hand are the issues of life and death,—to Him who "counteth the nations as the small dust of the balance, and who taketh up the Isles as a very little thing."

MR. WYLLIE'S ADDRESS.

Read before the Royal Hawaiian Agricultural Society, on the 12th of August, 1850.

GENTLEMEN :—I hail the commencement of your labors as a Society for the promotion of Hawaiian Agriculture, as the beginning of a new and better Era, on these islands. Although, from education and habits, ill prepared to be a useful member of your Society, yet I promise you to be a zealous one.

You have very appropriately, chosen the *King* to be the *Patron* of this Society. And I say, respectfully, it well becomes His Majesty, who has had the liberality and political sagacity to break through all the ancient usages, prejudices, and laws, that bore upon the possession, cultivation, and transfer of land, and to establish laws opening the soil to the tenure of all, and for the benefit of all, to be the Patron of such a Society. In doing so, His Majesty has become the Benefactor of all, and naturally becomes the leader of all those who are disposed to participate in the benefits of the policy that He has had the wisdom to adopt. In carrying it into effect, He has been beset with difficulties which can hardly be appreciated. His native subjects are not yet sufficiently enlightened to perceive, in His Majesty's late measures, anything but an abandonment of native rights, and a disposition to confer wealth and power on Foreigners. To you it will belong to undeceive them, by practical lessons of useful industry, increasing the King's revenue, enriching the Chiefs and native Landlords, and affording profitable employment to all the King's subjects who wish to work. The King expects this of you, and that your willing subjection to His jurisdiction, in the enjoyment of the rights which He has conferred upon you, will be His Majesty's best justification for lending a deaf ear to all evil forebodings of a loss to His Sovereignty, by your admission to a right in the soil. I am quite sure that you will not fail, in this point, of grateful duty ; and I am no less certain that the history of coming ages will record the King's enlightened policy in regard to land, as the pride and glory of His Majesty's reign.

Agriculture as an art, commenced with the existence of Man upon the Earth. Adam was placed in the Garden of Eden, to cultivate and take care of it, as the employment most congenial to the state of perfection in which he was created. The first lessons of the art, were thus given by God himself. And when Man fell from that state of perfection, in which he was created, it was his doom, by the toils of agriculture, during his probationary state, to prepare himself for the recovery, in another and better world, of that perfection which he had lost.

A land flowing with milk and honey and abounding in the precious fruits of the Earth, typified with the Hebrews, the fulfilment of God's promises to Abraham, Isaac and Jacob, in the Redemption of the world.

Agriculture, and the pasturage of cattle, thus became, and continued to be, the chief occupation of God's chosen people, till by their hard heartedness, disobedience and unbelief they were cast off, and scattered among Gentile Nations.

Agriculture was held in high estimation by the ancient Egyptians, and by the chief nations of Antiquity. It is the process by which nature yields her products for the support of man and animals, for useful arts and manufactures, and for that commerce which unites the different nations of the earth, as members of the same family, and conveys to all, the knowledge of the one only true God, to whom belong the earth and the fulness thereof.

Nor was agriculture unknown to the ancient Hawaiians. The early Navigators, Cook, Vancouver, and others, have recorded their skill, and industry, in that important art, and their admiration of the ingenuity of the Hawaiians in conducting water by *conduits* to fertilize their fields, in constructing paths to divide them, and fences to enclose them. That those early accounts were not exaggerated is proved by the vestiges of ancient cultivation that may be traced in every valley, and on the slopes of every hill, where the soil was good, throughout the Islands.

Even in the oldest times of which we have records, the Hawaiians raised enough for themselves, and to spare for others. But they were not, then, accustomed to the conveniences and luxuries of civilized life. These conveniences and luxuries have now become *necessities*, increasing from year to year. They cannot be supplied without the

aid of foreign merchants; and foreign merchants will not supply them, unless they get something in exchange, of sufficient value to replace the money which they paid for such necessaries, and luxuries, and to leave them some compensation for their trouble, in buying them, in bringing them to your shores, and in selling them to you. But they are quite willing for their woollens, their linens, their silks, their cottons, their hardware, their furniture, &c. &c., to take your sugar, your coffee, your cotton, your arrow root, your tobacco, your indigo, your potatoes, your hides, your tallow, and many other articles for which the soil of the Islands is well adapted, and which you can easily produce, to the extent of your labor, provided you offer it to them of as good quality, and as cheap as they can obtain it elsewhere.

No intelligent Hawaiian, then, can fail to perceive, that it is the interest of his countrymen to obtain as many of the good things of other nations as they can; and it must be equally clear to him, that in order to get them, it is his interest to be able to offer, in exchange, as many of the good things of his own Islands, as possible. Now the very end and object of this Agricultural Society is to place him in this advantageous position. Its establishment, therefore, is a national advantage, worthy of the Patronage of the King, and of the hearty cooperation of all the Chiefs, Landlords, Tenants and Laborers throughout the Islands.

Even under the most enlightened Governments of modern days, such societies have received public encouragement. In England, in 1793, a *Board of Agriculture* was created, chiefly through the exertions of Sir John Sinclair. At first it was a mere private association for the promotion of agricultural inprovements, but being assisted annually by a Parliamentary grant, it became a semi-official Institution. One of its first proceedings, was to commence a survey of all the English Counties on a uniform plan, which brought out for the information of the class most interested in adopting them, improved practices, originating in individual enterprise and intelligence, and which were confined to one particular district. During the years of scarcity in England, at the end of the last, and beginning of the present century, the Board of Agriculture took upon itself to suggest, and as far as possible, provide remedies for the *dearth*, by collecting information, and making reports to the Government, on the state of the Crops. It was the fallacy of past ages of ignorance and tyranny, that civil Governments

were, and ought to be, all in all, and ought to regulate every thing. It is the wisdom of the present age of light and freedom, that civil Governments ought to remove shackles, and burdens upon industry, to leave it to exert itself in its own way, and not to disregard, or reject, the suggestions or recommendations of those who, expert in their own callings, know incalculably more about them, than any Government possibly can.

The Smithfield Club was originated about 55 years ago. It addressed itself chiefly to the improvement of Breeds of Cattle.

The Bath and West of England Society has been in existence 75 years, during which, it has regularly published it transactions, whereby it has contributed to many agricultural improvements.

In 1838 another Society was commenced in England, under the name of the Royal Agricultural Society of England, consisting of 466 members. Next year the number had increased to 1104, and in 1844 to 6927, of whom their were 95 life Governors, paying £50 each on admission :—442 life Members paying £10 on admission : and 6161 annual Members, paying £1 each yearly. This Society is debarred by its 22nd bye-law, from discussing any political question, at any of its meetings. It received a Charter of Incorporation on the 26th March 1840, in which charter the objects of the association are set forth as follows :

1. To embody such information contained in Agricultural publications, and in other scientific works, as has been proved by practical experience, to be useful to the cultivation of the soil.

2. To correspond with agricultural, horticultural, and other scientific societies, both at home and abroad, and to select from such correspondence all information which, according to the opinion of the Society, may be likely to lead to practical benefits, in the cultivation of the land.

3. To pay to any occupier, or other person who will undertake at the request of the society to ascertain, by any experiment, how far such information leads to useful results in practice, a remuneration for any loss that he may incur by so doing.

4. To encourage Men of Science to devote themselves to the improvement of agricultural implements, the construction of farm buildings, and cottages, the application of chemistry to the general pur-

poses of agriculture, the destruction of insects injurious to vegetable life, and the eradication of weeds.

5. To promote the discovery of new varieties of grain, and other vegetables, useful to man, or for the food of domestic animals.

6. To collect information with regard to the management of woods, plantations, and fences, and on any other subject connected with rural improvement.

7. To take measures for the improvement of the education of those who depend upon the cultivation of the soil for their support.

8. To take measures for the improvement of the veterinary art, as applied to cattle, sheep and pigs.

9. At the meetings of the Society in the country, by the distribution of Prizes, and by other means to encourage the best mode of farm cultivation, and the breed of live stock.

10. To promote the comfort and welfare of laborers, and to encourage the improved management of their cottages and gardens.

For the purpose of holding its country meetings, England and Wales are divided into nine great districts, and a place of meeting, in each, is fixed a year beforehand. At Derby, the show of agricultural implements consisted of 700 different articles, valued at £7,400, or 35,520 dollars. Under such a stimulus, it is needless to say that both husbandry, and the implements of husbandry, have vastly improved in the twelve years of the society's existence.

A reading room and library are attached to the society's house, and the Journal of the Society which commenced in April 1839, in less than five years, had a circulation of 10,000.

The great success of this Society, has given rise to numerous county societies, and to a great many farmer's clubs throughout the kingdom, which have done much good.

In France there are schools of agriculture, assisted by the State. Young persons, there, can be instructed in the art, or rather science, both theoretically and practically. At Grignon, one of the Royal Palaces, the domain attached to it consisting of 1185 acres of arable, pasture, wood and marsh land, has been devoted to the teaching of agriculture. The practical part of the education is conducted on the following system. The pupils are instructed, in succession, in all the different labors of the farm. Some perform operations of veterinary, under the direction of the Professor of that branch, others

work in the garden, woods, and plantations, inspect repairs on premises, make starch, cheese, butter, &c., attend to the manure, the compounding of drugs, the keeping of the books, &c. The Professor who presides over the practical part of their education, explains the proper manner of executing the field operations, while the pupils are at work. After two years training in the theory and practice of rural economy, to every pupil, who passes his examination before the Professors collectively, is granted a DIPLOMA, that he is capable of fulfilling the duties of what may be styled an "*Agricultural Engineer.*"

Simultaneously with instruction in practical details, theoretical knowledge is imparted by the professors, in courses of lectures, upon the following subjects :

1st. The rational principles of husbandry, and on the management of a farm.

2d. The principles of rural enonomy applied to the employment of the capital and stock of a farm.

3d. The most approved method of keeping farming accounts.

4th. The construction of farm-buildings, roads, and implements used in husbandry.

5th. Vegetable physiology and Botany.

6th. Horticulture.

7th. Forest Science.

8th. The general principles of the veterinary art.

9th. The law relating to property.

10th. Geometry applied to the measuring and surveying of land.

11th. Geometrical drawing of farming implements.

12th. Physics, as applied to agriculture.

13th. Chemistry, as applied to the analysis of soils, manures, &c.

14th. General notions of Mineralogy and Geology.

15th. Domestic medicine applied to the use of Husbandmen.

The pupils are of two grades, of which, one pays £48 a year, and the other £36. The Professors are paid by the Government.

The Austrian Government support agricultural institutions, at Vienna, Prague, and Pesth.

The King of Bavaria has given up the Domain attached to the Royal Palace of Schleissheim, to be used as a model farm. In 1840, there were 21 pupils who paid annually £15 each, and 11 who paid about £6. The latter were mere field laborers.

The King of Wirtemberg, has appropriated an old Palace, at Hohenheim, two leagues from Stuttgard, for an agricultural College. The land attached to the Palace is about 1100 acres. Lectures are delivered by 12 Professors on Mathematics and Physics, Chemistry and Botany, Technology, Tillage, and other operations of rural economy, Forestry and the veterinary art. Attached to the Institution is a small botanical Garden; a Museum of Zoological, Botanical and Mineral objects, skeletons of Domestic Animals; collections of seeds and woods, and a library of works on rural economy. There is also connected with the establishment, a manufactory of beet root sugar, a brewery, a distillery of whiskey from potatoes, and a nursery of silk worms. The superior class of pupils pay for their board 120 florins, and for their instruction 300 florins a year, making in all £37, or about $177.

The late King of Prussia founded a most important Institution for the improvement of agriculture, at Mogelin, in Brandenburg, about 40 miles from Berlin. It consists of a college and a model farm of 1200 acres. It is under Professors who teach theoretically and practically, nearly the same branches as at Hohenheim; but each pupil has to pay £85 a year, or about $385. Besides, there are in Prussia a model farm and Academy of Agriculture, in nearly every Province.

My own native land Scotland, has long been famed for the excellence of its husbandry. That excellence is the more creditable to Scotland, that it does not depend either upon the superiority of soil or of climate. It is owing to the societies which from a remote period have existed there and conducted the mind of the Scotch farmer to improvements not thought of, even in England, till long afterwards. The nobility and gentry of Scotland were patrons of agricultural improvements, within their own estates, for a period far back. But the first regular society was established in 1723, under the name of "The Society of Improvers in the Knowledge of Agriculture." The Society continued to publish its transactions till 1755, when it ceased to exist, and was succeeded by a new society, known under the name of the Highland and Agricultural Society of Scotland. This Society publishes quarterly a journal of its transactions, which has a high reputation and enjoys an extensive circulation.

The Scottish Agricultural Chemistry Association was established in

1843, and is an admirable institution. It can be extended to any district where there are sufficient subscribers to command the services of a competent chemist. Landed proprietors who subscribe twenty shillings, (about four dollars and forty cents) yearly, and tenants who subscibe ten shillings yearly, are entitled to have performed analyses of soils, manures, &c., according to a scale fixed upon. Advice without analysis is given by letter, for a charge of two shillings and six pence. Thus, in every county in Scotland, the farmer can be instructed in the exact description and quantity of manure, which he ought to apply to any field that he is about to cultivate, so as to enrich it with what the soil most wants. In the University of Edinburg there is a Professorship of Agriculture, where all theoretical knowledge is taught. There is a Lectureship, on the same branch, in the University of Aberdeen, and it has long been customary to perfect young men, in the practical details of farming, by sending them to exercise it, for a few years, among the incomparable farmers of the Lothians.

In Ireland, a *Royal Agricultural Improvement Society* was established in 1840. Since its establishment, numerous local societies have been established throughout the counties, in connection with the parent societies. It has an Agricultural Museum in Dublin, for the reception of implements of husbandry, seeds, grasses, &c.

It contemplates the establishment of an Agricultural College, and has already spread throughout Ireland much useful information, by the diffusion of cheap publications. But the good effects of the Society are greatly counteracted by predial outrage, sectarian partizanship, political agitation, and defects in the tenure of land.

With, our now, near neighbors of the United States, the land laws are admirable, but except in the vicinity of great cities, where land is of great value, a very laborious and scientific agriculture is not to be expected. The necessity of a precarious climate, a poor soil, and little choice of land, has made the Scotch farmer the best in Europe; but the same necessity does not operate upon the American. What operates with him is how to countervail the high price of labor, and in his contrivances to attain this object, he surpasses the husbandman of all other nations. Another influence that operates upon him, in an extraordinary degree, is to travel over the world westward. Thus we have the late proprietors of farms on the rich soils of Ohio, Indiana,

Illinois, and Missouri, with axe in hand clearing out new farms on the far inferior soil of Oregon; and so irresistible does this *occidental* propensity appear to be, that soon after the establishment of a trans-Pacific line of steamers, we may expect to hear that Jonathan, axe in hand, is at Jeddo or Pekin. He has, therefore, no time to stop to experiment upon, and manure his land; and why should he, where by shifting a little westward, he can so easily change an exhausted soil, for one of virgin richness? Still, of all men in the world, the Americans are the men to break up a new soil, and overturn the forest; and I should not be sorry to see some thousands of them here, if they would only bring their axes and leave their rifles. But their arrival, here, is not to be expected, for their course like that of Phœbus himself, is straight westward, and the Hawaiian Islands lie to the south of their track.

Sorry indeed would I be to do our enterprising neighbors injustice. If I have done so in regard to their agricultural societies, and the increased fertility that they have given to the soil, of which they have so much, I stand in the presence of my friend the United States Consul, Mr. Allen, lately one of the law-makers of that mighty confederation, and who, I am sure, will correct my errors with that ready courtesy which ever distinguishes him. There are many other citizens of the United States, now present, who can speak of the state of the agriculture, in their respective states, much more correctly than I can, though there are few states in which I have not eaten, and heartily too, of their "*wheat cakes and chicken fixings, corn bread and common doings*," which I consider proofs *rather substantial*, that they know how to make mother earth yield her treasures, of which discovery the famishing Irish have been made participators, without having gone so far to make it, as I did.

I have thus digressed, in order to show from what has been done by agricultural societies, elsewhere, what may be expected to be done by them, here, where a virgin soil invites them to experiment; where the most intelligent men in the community rank in the Provisional Committee, whose members are now present, and where the King himself patronizes their association. I must confess I anticipate an incalculable degree of good, from the Society, which I hope I may consider now formed; and I have no doubt that the just judgment of pos-

terity will award to the members, the honors of eminent benefactors of the Hawaiian nation.

We are now in a position duly to appreciate the great benefits conferred on the nation by the introduction of seeds, plants and animals, by those who have gone before us.

In running through the pages of Capt. Cook, we find the following productions, only, of the Islands seventy two years ago, viz :

Taro of large size and fine quality.
Sweet potatoes, from 12 to 14 pounds each.
Plantains, five or six varieties.
Bread fruit ; scarce.
Yams ; scarce.
A sweet root like a yam in form; probably the root of the ti plant.
Sugar cane of large size and good quality.
Cocoa nuts.
Ava root.
Gourds.
Fowls; scarce.
Hogs; abundant.
Dogs; used as food.
Geese.
Large White Pigeons.

Fourteen years afterward, or fifty eight years ago, when Vancouver visited the Islands, we find that the following were the only new productions, viz : Goats,

Water Melons.
Musk Melons.

Since those days the productions of the Islands have become wonderfully multiplied, and their wealth has increased in proportion. I have taken some pains to learn to whom the Islands are indebted for this great and beneficial change. They are as follows :

1. The discoverer, Capt. Cook, who on Sunday, the first of February 1778, left on the Island of Niihau, one ram goat and 2 ewes, a boar and sow of English breed, and the seeds of melons, pumpkins, and onions.

2. Captain Colnet, who left a ewe and a ram on Kauai, before the arrival of Vancouver.

3. Captain Vancouver, who, on Sunday the fourth of March, 1792, left to *Tianna* on Hawaii, some vine and orange plants, some almonds and garden seeds, and to Keaumoku (the father of Kaahumanu) a goat and kid, some fine orange plants and garden seeds. On the 13th of March, 1792, he left to the young Prince Kaumualii, of Kauai, a male and female goat and two geese; on the 25th February, 1793, he left to Keaumoku, before mentioned, one ram, two ewes and one ewe lamb; on the 19th February, 1793, he landed a bull and cow from California, for Kamehameha I, in the canoe of Krimamahoo, off the coast of Hawaii; on the 22d of February, 1793, he landed five cows, two ewes and a ram, in the bay of Kealakeakua, for Kamehameha I; on Tuesday, the 5th of March, 1793, he landed in the same place, for the King, a variety of culinary utensils, implements of husbandry, smiths' and carpenter's tools; on the 17th of March, 1793, he presented a large assortment of useful tools, implements and household utensils, and some goats to the king of Maui; on the 28th of March, 1793, he presented a complete set of armorer's tools to Enemo, the ruling chief of Kauai; on the 15th of January, 1794, he landed a bull, two cows, two bull calves, five rams, and five ewe sheep, from California, in Kealakeakua Bay, for Kamehameha I.

4. Don Francisco de Paula Marin, who came to the islands at a very early period, (it is believed in the Princesa Real, in 1791) and who appears to have served the King in many capacities. His jounal, kept in Spanish, and consisting of several volumes, is in my possession. The volumes are much dilapidated, and as the first entry is dated 14th November, 1809, there is reason to believe that several volumes have been lost. I have hastily extracted the following particulars from his journal:

On the 11th January, 1813, Marin says he had planted at sundry times, some pine apples and an orange tree, beans, cabbages, potatoes, peaches, chirimoyas, horse radish, melons, tobacco, carrots, asparagus, maize, fig trees, lemons, lettuce, and that he had been engaged in making kukui oil, cocoa nut oil, candles, tiles, hay, cigars, and had acted in the several capacities of butcher, cook, mason, ship carpenter and physician:

On the 27th of June, 1813, he was engaged in making nails:

On the 24th of February and 1st of March, 1815, he was engaged in planting vines for the King:

On the 6th of July 1815, it is recorded that he made 38 gallons of wine :

On the 13th July, 1815, that he made five flasks of brandy:

On the 7th of December, 1815, that he made a barrel of beer :

On the 30th of December, 1817, there is a record that he planted coffee, cotton, made lime, planted cloves, salted pork, made pickles, planted tomatoes, turnips, pepper and chilis, sow'd wheat and barley, made castor oil, soap, molasses, syrup of lemon juice, planted saffron, cherries, and made shirts :

On the 25th of February, 1819, he was engaged in making sugar :

On the 15th of April, 1819, that he was sent for to cure the King, with whom he remained till the 8th of May, when he says, the king died, aged 60 years and 6 months :

On the 18th of May, 1819, that he was repairing muskets :

On the 27th of August, 1819, that he was selling vegetables for the King to the French sloop of war "Descubierta :"

On the 14th of September, that he was making extensive purchases from vessels, for the King :

On the 22d of September, 1819, he says : "This day they brought me the first orange, though I planted the seeds eight years ago ;"

On the 4th of November, 1819, that he was engaged bartering sandal wood for rum :

On the 8th of December, 1819, that he received the commission of Captain, which commission is still extant :

On the 14th of March, 1820, he records, "this day arrived the brig of middling size, called the Thaddeus, Capt. Blanchard, bringing missionaries for these Islands.

From this brief account of the labors of Don Francisco de Paula Marin, from 1809 to 1820, few of you will doubt that much of the present wealth of the Islands, is owing to seeds, roots, and plants introduced by that one man. In my own opinion, it may be fairly questioned if there existed on these Islands, or exists at present, any man, to whom the Hawaiian people are generally so much indebted. His surviving children, therefore, are well entitled to the favorable consideration of the King's Government.

It is true that Marin was more frequently engaged in distilling brandy, rum and beer, than I have thought it worth while to record.

But, nevertheless, he seems to have been, upon the whole, a temperate man, for, from 1809 to the 14th of March, 1820, he only records that he was drunk on three occasions, on one of which they had to carry him home. If he had been oftener drunk, I have no doubt he would have mentioned it, for his journal is singularly minute in regard to his private habits, and those of the King and the ladies of his family. It is due to his memory to mention, that amongst his papers were found some ancient translations into native of the Lord's prayer, and other prayers used by the Catholics, from which it is to be inferred that he had made some effort to abolish the native idolatry.

As the intercourse of the natives from 1778 to 1827 was confined almost wholly to English and Americans, a knowledge of their language had become indispensable to the multiform agencies in which the King employed him; consequently he had applied himself to the study of their language with so much success as to become a kind of notary and interpreter for the King.

It may not be out of place, here to remark that on the 30th of October, and 26th of November, 1814, and on the 6th of January, 1815, he records three successive and peremptory orders, as sent down from Hawaii, by Kamehameha I., touching the residence of foreigners, and their rights, which clearly show how much Kamehameha III. has exceeded his father in the liberality of his policy towards foreigners.

In fourteen years that intervened between the visits of Capt. Cook and Vancouver, the Islands had been visited by Captains Brown, Meares, Metcalf, Portlock, Kendrick, and others engaged in the fur trade, but I have been able to find no record of any introductions of seeds, plants, or animals by them, and in like manner from the time of Vancouver up to the arrival of the missionaries, they had continued to be visited by vessels engaged in the same trade, and in the sandal wood trade, and it is fair to presume that several, from their own benevolence, or at the request of resident foreigners, had made large additions to the seeds and plants and animals known at the time on the Islands. To do justice to those parties, I know no one so well qualified as my friend Mr. Reynolds, now present, who in his person unites the Consular Agency of France, the Consulship of Bremen, and the Consulship of Hamburg.*

* It is believed that the Islands are indebted to Capt. John Meek, and to Mr. Wm. French, for sundry valuable importations.

Although Marin's journal is continued from the 14th of March, 1820, to the 1st of August, 1826, I have abstained from any mention of his labors in promotion of agriculture, beyond the former date, because after that date a new and more sytematic agency commenced on the Islands, I mean that of the American Missionaries, the first of whom then arrived, under instructions from the philanthropic Board, which they and their successors have carried into effect, in so many places and with such beneficial results in the introduction of seeds, plants, roots, implements and utensils, as cannot be done justice to in a passing notice.

Suffice it to add that Marin died in October, 1837, in the 63d year of his age, and that he devoted all his spare time up to the day of his death, to the cultivation of his garden, and to the other useful works in which he had taken an active part for many years.

If every member of the society only intimate his zeal, with the additional advantage of the enlightened policy, now adopted by His present Majesty, I am quite certain that with its installation will indeed dawn a new and a better era, on these charming Islands.

REMINISCENCES OF HAWAIIAN AGRICULTURE.

By Stephen Reynolds, Esq.

Agriculture claims the attention of the world. To a greater or less degree every nation cultivates the ground. The first discoverer of these Islands found agriculture was attended to, and considered of the utmost importance by the natives: although not extensive. Their commerce was trifling, consisting of occasional visits from and to the different islands of the group. The *kalo* was the great object of their agriculture, yet the sweet potatoe, melon, banana and other vegetables and fruits were not neglected; but by whom and when introduced, so far as I have been able to ascertain, is unknown.

There can be but very little doubt, that the discoverer and early navigators left seeds and plants, but not being cared for by the natives, very little attention was paid to their cultivation—and therefore soon

became extinct. It is impossible at this late period to find who brought the first seeds and plants to Hawaii. In 1792 Vancouver gave orange plants, a packet of garden seeds, &c., to Kahaumoku, a chief on Hawaii, the father of Kaahumanu.

Coffee plants were introduced by Lord Byron in the "Blonde" in 1825. If the plant had been introduced here before, it had become extinct. These plants were taken on board at Rio Janeiro.

In an agricultural and commercial view, cane and coffee are most important—for food, the kalo. Experience has proved thus far that the soil and climate are favorable to the coffee tree, to the growing of cane and manufacture of sugar.

The first enterprise to any extent to start a plantation on these Islands, was undertaken by Mr. John Wilkinson, who came from England under the patronage of Gov. Boki, when Lord Byron in the "Blonde" brought Gov. Boki and his party back to the Islands, and the remains of the King and Queen who died in London.

Mr. Wilkinson had make partial arrangements with Gov. Boki while in England, to be completed here. Manoa valley was selected as an eligible situation, and a suitable soil for a coffee and sugar plantation. The documents were made out and operations began. Mr. Wilkinson, unfortunately, had but small funds which were soon expended. He began on a large scale—laid out a large garden in a most fanciful and tasteful manner. He commenced operations in July or August 1825. Every kind of farming utensils was wanted—not to be had,—to carry on so great an undertaking. Carts, ploughs, hoes, —all were very scarce. Expedients had to be resorted to. The land was mostly prepared by natives with the *oo* or digger, a long and costly process, for a speedy operation. Labor at 25 cents per day soon exhausted the planter's funds. He was sickly, and died March 1827. He had more than one hundred acres of cane growing when he died. Gov. Boki was desirous to save it. Mr. Wm. French, John C. Jones, Esq., John Ebbets and myself took an interest in the plantation. After the first cutting, the plantation dilapidated and wasted away for want of protection. The coffee trees were left to grow without care or attention. Small parcels were picked by the natives, a pound or two at a time. Whether the same trees are still growing I do not know. Alexander Adams planted some slips in Kaliki valley that produced excellent coffee. Also at Niu a valley beyond Dia-

mond Hill. Rev. Joseph Goodrich introduced coffee plants at Hilo, which grew luxuriantly. There were two kinds, the large white and the dark berry—similar to that now cultivated at Hilo. Some plants were introduced on the west side of Hawaii, which grew and produced largely, demonstrating most clearly that it was well adapted to that part of the island. The plantations of Mr. Charles Titcomb, and Mr. Godfrey Rhodes, on the island of Kauai, give complete evidence that coffee of superior quality grows on that Islands yielding large crops.

Cattle.—The first cattle were landed by Capt. Vancouver, from California. He landed first a bull and cow, they were too weak to to stand up ; he hired a canoe to take them on shore where they could get grass. The bull died in a few days ; the remaining cattle, healthy but thin, were landed at Kealakeakua. The loss of the bull was a misfortune which prevented any increase. He had but one hope. Two of the young cows proved to be with calf, and if one should bring forth a male, the increase might safely be effected. Fortunately his hopes were realized. At the request of Vancouver, Kamehameha tabooed the killing of cattle for ten years—except the males should become too numerous. Then the King might kill for his own, the Queen's and Chiefs' eating.

The women were not allowed to eat of the same animal as the King and chief—they were to have a separate animal. Few cattle were killed until after 1830; they were killed mostly for their hides ; they were greatly thinned off, and being so much harrassed, retreated farther up the mountains.

Sheep were also introduced by Vancouver at the same time. He landed one ram, two ewes and one ewe lamb at Kaunelae, presented to Kahaumoku, partly in consequence of his care of the goat and her increase that had been given to him the year before. Also one ram and two ewes were landed at Kealekeakua with the cows. The dogs killed the ewes a few days after they were landed, for which remorseless murder, the dog was promptly killed.

Goats.—Vancouver left goats on his first visit, but does not say it was their first introduction.

Horses.—I have not been able to find the name of him who introduced the first. It appears two were brought and presented to Kamehameha; the natives say Mr. Manine was in the vessel. Several were brought before 1823. From 1824 to 1838 many cargoes were brought

from California. The horses born and reared on the Islands are superior in all respects to those imported from California,—better limbs, better spirits, and tougher animals. But slight attention has been given to procure good studs, an object that claims the attention of all who are fond of spirited horses.

SWINE.—Tradition reports that too hogs, two dogs and two fowls, were landed from a vessel, the officers wore uniforms, cocked hats and swords.

POULTRY.—Turkeys have been introduced within the last thirty years, or if introduced no pains were taken to induce care or attention in rearing. Vessels from China have frequently brought and landed geese, but they have not been able to stock the Islands.

SEEDS.—Garden seeds were introduced before Vancouver by trading vessels. In 1811, the vessel on board of which I was a foremast hand, took beets, turnips, onions, &c. Onions used to be raised of large size and good flavor at Kohala, Hawaii, and at the Island at Niihau. Green peas have been raised in Nuuanu valley by Wm. Hinckley, at Kalihi, by Alexander Adams. They came up well, but in a day or two, the worms entirely destroyed them.

SQUASHES, melons, &c, grow to great perfection, although not a great variety. Grapes flourish exceedingly well, and would be of excellent flavor if left on the vine until they could perfectly ripen. I dare say you all know by experience that you find many, very many "*sour grapes.*"

FRUIT TREES.—Orange, lemon, lime, citron, shaddock, &c, grow finely. The orange is of two sorts, sour and sweet. The best grows on Hawaii,—probably from the stock introduced by Vancouver. On Kauai, at Hanalei, there are some most excellent sweet. The Guava grows profusely on all the Islands. Apple trees grow very well, but do not bear any apples; no doubt they would produce good fruit on the Hawaiian mountains. Let some of the members of the Agricultural Society try the experiment. Good apples would pay. Peach trees grow well. The fruit is small, but of fair flavor.

Implements for farming were not in use till about 1825-6. The natives dug the land with an instrument of oval form, about eight inches long beside the socket, or sometimes a broad chisel. This instrument is called an *oo*. Carts were introduced about the same time, Jersey

wagons about 1826–7. Household utensils were but very little used till recently. Vancouver presented King Kamehameha with a few articles of kitchen and table utensils. Capt. Benjamin Worth of the ship Catharine, of Boston, in 1801 gave Kaahumanu some white plates; he was ever known by the name of pa-keokeo (white plate.)

Oxen.—These noble animals were used by the missionaries, about 1825–6. Many excellent teams are now in daily use in this city. Several plantations kept from ten to fifteen yoke of good working oxen. Good yokes and good teamsters are much wanted to complete well trained and experienced teams.

Indigo.—Seed was brought here first in the summer of 1829 by Dr. A. P. Sevier. It was planted on land at Waikiki, belonging to Capt. Wm. Sumner, and grew to the entire satisfaction of Mr. Sevier. He also planted some seed at Pearl River which grew luxuriantly. He manufactured some parcels from the growth at Waikiki, which he thought excellent—showing that Indigo might be cultivated with much success.

Potatoes.—The sweet potato has been cultivated so long that its origin cannot be traced here, at least so far as my inquiries have been made. The Irish potato was but little cultivated until since 1820. The large red potato appears to have been introduced by Capt. Joseph Maughan. He gave some to Gov. Boki, who gave a part to Gov. Hoapili, of Maui, where they flourished, and have been raised in great abundance. They yield better on that Island than on either of the other Islands.

The Mulberry tree was introduced a few years since for the purpose of feeding the silk worm. The trees grew finely, but the silk worms did not thrive.

BENEFITS OF AGRICULTURAL ASSOCIATIONS.

By Henry M. Whitney, Esq.

Agriculture is the soul of a nation—the vital, living part, which gives life and vigor to every branch of industry. A manufacturing or a sea-faring people, may, as a nation, be wealthy; but if deprived,

by nature or otherwise of agricultural resources, such a nation must be dependent upon others for the means of subsistence, and must be exposed to the constant fluctuations of commerce, and to the disadvantages which a dependence on foreign productions always creates. Wealthy in one respect, it is poor and dependent in another.

It does not need a dense population or crowded cities, to constitute a wealthy people; but a people, which, after producing enough to supply its home consumption, has still a surplus for export, is wealthy just in proportion to the amount of such export.

The object of the present effort is a noble one,—it is no less than an effort to increase the spirit that creates such wealth,—to give impulse to every measure tending to develop the sources of such wealth, and to unite all who are endeavoring to promote the agricultural prosperity of these Islands. Time is gradually, but sensibly working great and important changes here. It is but a short time since the foreigner, who landed on these islands, found it impossible to obtain the land he desired, so close was the policy of the rulers, except as he might chance to become the recipient of royal favor; and every thing about him tended to impress on him that he was a stranger in a strange land. But now, the foreigner buys his land; and in that land and in its improvement he feels an interest, as well as in the prosperity of all the Islands.

We look over the plains, hill-sides and valleys, and ask by whom are these plains and vallies to be cultivated, what are they best adapted to yield, and what are the probable capacities of these Islands. These are questions that may not be hastily answered, for they need examination and study from us as individuals and as a society.

Every one must own that it is not the hand of native industry that is to change these wastes into vineyards. That may continue still, as for ages past it has done, to till the luxuriant vales, where nature promises and grants her hundred fold to the most indifferent laborers. But the principle ever acted on, and the only one that governs the native producer, is that the supply must not exceed the actual wants for consumption; and to this limit has always been confined the native agriculture, and, so far as can be judged, it will always be confined.

If native industry is never to till these plains, and necessity demands that they be tilled, they must be yielded to the foreigner. It is his industry that will change the face of the land, and turn "the barren

wilderness into a fruitful garden." If the dwelling and the mansion of the *haole** are in future seen on every rising mound, it will not be the hand of tyranny or invasion that places them there, but industry alone.

But what are these lands best adapted to yield? On this subject we need the dissemination of light—we need facts—such facts as the experience of the farmer alone affords. The adventurer from other countries arrives on our shore, seeking a spot where he may enjoy the home and happiness he has so often pictured to his fancy. He selects and purchases his land, he has the means of liberally improving it, but he is ignorant what will best remunerate his labors. He sees that in certain localities the sugar cane flourishes, in other places he finds the coffee plant a favorite, and in others still he finds that vegetables best repay the labor expended. He is told that perhaps this, perhaps that product will be found best by him. Ignorant of the experience of those who have had to test the capacity of the soil for certain products, or of their modes of cultivation, or of the success or failures that have attended their labors, he commences his experiments. His labors perchance meet with success; perchance they prove a failure, diminishing his capital, and disheartening him in the very outset of his enterprise.

Here we may see the benefits which such an association as this must necessarily produce, viz:—the collecting and dissiminating useful knowledge, the practical experience of those who have already met with fortunes or misfortunes. "Knowledge is power." It is such power as the husbandman needs, to procure from the smallest capital and the least labor, the greatest results. Let the coffee planters of Hilo and Hanalei, the grain and sugar cane planters of Maui and Koloa, the potato growers of Kula, and the numerous farmers scattered over the Islands, publish the modes of cultivation they have found most successful, and also those they have found entirely useless, and the cause of agriculture would be prospered, and with it the nation's prosperity must be promoted.

Another interesting question is, what are the probable resources of these islands? Their area has been variously estimated at from 6000 to 7000 square miles, but, until accurate surveys are made, it will be impossible to state the exact extent of our territory.

* Haole, foreigner.

I will assume, however, as the basis of this estimate, that the superficial area is 7000 square miles, or 4,480,000 square acres. The greater part of this area, we all know, consists of mountanous tracts, wholly unfit for cultivation, but a large portion of it is valuable as wood land. Of the whole surface, probably one tenth, or 448,000 acres, will be found tillable and fit for agricultural purposes.

Now, what is this land capable of producing? If we estimate that one half of it, viz, 224,000 acres, yields annual crops to its cultivators, while the other half remains fallow or uncultivated, and take the produce of the sugar cane as an average of the entire crops of the kingdom, we may perhaps approximate the truth, in obtaining a result which may one day be found correct. One ton of sugar is considered an average yield per acre, but skillful planters are found who obtain two tons per acre. The value of sugar we will place at 6 cts. per lb as a fair remunerating price, though at present it is much higher. The yield per acre would then be $120, and the value of the annual produce of the soil of these islands would be about $27,000,000. Of this annual product one fourth would be needed for home consumption, leaving $20,250,000 as the value of the annual exports from agriculture alone. Of the remaining 4,032,000 acres, probably 1,000,000 acres are suitable for pasturage and grazing, and would sustain at least 1,000,000 head of cattle, one fourth of which might be annually withdrawn, and considered as the annual produce of the pasture land. These valued at $10 per head, would produce $2,500,000 of which one fourth should be deducted for home consumption, leaving $1,875,000, as the amount of the annual produce for export from the pasture lands in the shape of hides, tallow, salt beef, &c. But besides this, the productions of the dairy, butter and cheese, would be very considerable, and would find ready and constant markets. The dairy might be made to yield for export at least $1,000,000.

We have then, the following summary of what these islands are capable of producing annually, for export, beyond a supply for home consumption.

From the produce of the soil,	$20,250,000
From hides, tallow and beef,	1,875,000
From butter and cheese,	1,000,000
	$23,125,000

But the produce of these Islands, is not to be estimated wholly from the few staples which are now cultivated. Their climate and soil are peculiar, presenting a variety which is seldom met with, and I trust we may see the day when we shall find the fruits of the temperate zone growing on our uplands in richest abundance, while in the lowlands are cultivated the productions of every tropical land.

There are some of our fruits which might be made sources of profit, and which need improvement and care. The tamarind grows with luxuriance in moist soils, and produces very abundant crops. But much care is needed in its cultivation, especially in pruning. The vine ought to receive more attention. The yield of the grape here is certainly astonishing. Clusters are frequently found on well pruned vines, measuring from fifteen to eighteen inches in length, with fruit nearly an inch in diameter. May not the day arrive when these islands shall be as famed for their raisins and their wines as Madeira? Nothing grows with more luxuriance or with less care, than the fig. Yet nothing has received so little cultivation as an article of commerce, as the fig. And what is there to prevent Hawaii from becoming as celebrated for the fig as Smyrna.

Thus we see, gentlemen, that the field for improvement in agriculture is a wide one, but in the very outset we meet with drawbacks that must make the progress of agriculture slow and perhaps tedious. You all know that one of the greatest of these is the question of labor, which is now become a question of vital importance to the Hawaiian producer, and to this noble cause of agriculture. Is the native population of these islands capable of furnishing the labor needed for the production of an annual export of $23,000,000? On this subject, opinion is divided. Some who have already tested the native laborer, assert that it will never do to depend on him, and have found it almost impossible to obtain the performance of the needed labor. I will not attempt to discuss this important subject, leaving it to those whose experience has been brought to bear on the the question. But before I shall coincide in the assertion that native labor cannot be depended on, I shall wish to see the inducements to make that labor useful thoroughly tested. We all know that the nature of the character of the Hawaiian is pliable. It is easily diverted, and, with proper inducements, it is easily directed. Has every means been tested to induce the cultivation of the spirit that makes a contented home? Is the

planter or farmer interested in making the home of the native laborer such as would tend to cultivate a contented spirit ? I do not know how the measure would operate, but I respectfully suggest it to those planters who have the means at hand, whether the erection of suitable cheap houses on their plantations, the providing these house with what would render them attractive to the laborer, with a constant endeavor to promote the welfare of the laborer, would not tend in some degree, to render such labor more useful. A constant eye to the welfare of the laborer is vitally essential to the welfare of the husbandman, and that man who is keenest in observing and studying the nature and wants of his laborers, and in forestalling their wants, will always find his interests most promoted.

Gentlemen, if a benign Providence has bestowed a rich reward on your labors, during the past year, that blessing has been given for wise and good purposes. It is given, not to lie idle, but for the development of the resources of these islands, and for the benefit of this people. It may be that for years to come the same Providence may bestow the same reward to labor. Let us study ways and means not only to benefit this interesting people, with whom we are becoming identified, but to bring into action the full resources of this favored group. Let each member of this association endeavor to enlarge his experience for his own and others' benefit, and to disseminate whatever knowledge may be useful or instructive to others; and the day may come when these Islands shall become a storehouse for the merchandise, and a treasury for the riches, of both shores of the Pacific.

THE VALUE OF SCIENCE, APPLIED TO AGRICULTURE.

By Wm. H. Pease.

I offer a few remarks to the Society, not presuming they will afford any novel or original ideas. They are offered, rather, as my mite of contribution towards the advancement of a cause, in which all residents of these Islands are deeply interested, and to which each one has it in his power to contribute to a greater or a less extent. The field is wide and open to the labor of all classes; the encouragement

sufficient to the development of our agricultural resources to their fullest extent. I need scarcely refer to the sudden revolution that has taken place in the state of affairs on the coast, as affecting these Islands. The march of Empire westward, to which gentlemen have referred, appears to have arrived at that heretofore indefinite locality, and, in company with civilization, has well nigh completed the circuit of the globe, and reached the goal from which it set out.

We have now, for neighbors, on the one hand, our Celestial friends, whose science and art date far back of our humble calculations, while on the other, the universal Yankee has made his appearance, with his new fangled notions, turning the world upside down, not knowing yet what he will do with it. In his search for the almighty dollar, every nook and corner of our wide ocean will be ransacked, and if possible made available. Were we to calculate the rapidity and extent of the changes about to take place around us, from the agents and means now in the hands of those who are effecting the settlement of the Western Coast of the United States, as compared with those in possession of their ancestors when they landed upon its eastern shores, and the progress they have made since, the most moderate predictions would appear wild and visionary.

I would merely instance one of those agents in comparing the May Flower and her little band, to the fleet of magnificent steamers now carrying thousands of their descendents to the El Dorado. From this agent, steam, may be expected the most important results, as affecting our Islands, by the opening of communication between the Pacific and the Atlantic, and the completing the last link in the great chain of steam navigation which will then encircle the world. Here on the islands we find every reason for encouragement. The four great staples of tropical growth, sugar, cotton, coffee and tobacco, can be produced, the crops being liable to less casualties than those in any other part of the world. As regards fruits and spices, there is but little doubt that we can accommodate all the tropical varieties with the temperature, moisture, soil, &c., suited to them. Although the introduction of some varieties may be attended at first with some difficulties, and perhaps failures, still by perseverance it may be accomplished. The conditions of their growth in the countries whence they are introduced, should, of course, be known and complied with as far as

possible. The enquiry might with propriety be made what varieties will not succeed, rather than what will. To those who have resided in tropical America, the neglect of their culture must be most surprising. It may be attributed in part to the exclusive use of kalo, as vegetable food by the natives. Also the length of time necessary to mature many varieties, has been an objection on the part of the whites. But their great importance in an economical point of view cannot be denied. Stock by their means, could be furnished at a price, which would secure the supply to the whaling as well as the merchant fleet, hereafter to be expected. The introduction of new varieties, together with the improvement of such as we have, is, in my humble opinion, the greatest benefit we can expect from the operations of such a society as has been formed, affecting, as it would, the interests of the greatest number of natives as well as whites. It can be accomplished also more readily and successfully than by private individuals. A large selection, and more full and accurate information respecting their growth and culture can be obtained from correspondence with kindred societies, and persons interested, particularly in the growth of such as are wanting here. In this work the labors of each individual member can be enlisted, by furnishing information to those officers of the society who have the matter in charge.

But our Paradise is not wholly exempt from the curse we are taught all lands lie under. The many rich advantages within our reach, are connected with difficulties and discouragements, and more will arise as cultivation extends. To avoid and overcome them experience and skill must be made use of. To apply and direct their use, is one object of an agricultural society. The amount of uncultivated land suited to the growth of sugar and coffee without expense, beyond that of simple cultivation is very limited. By what means to render other large tracts which are now given up to pasturage available, in the most economical and effectual manner, by preparation of the soil, irrigation, protection of the crops from the wind, &c, is of the highest importance to our land proprietors, enhancing as it would, the value of lands of all grades. The soil under cultivation at the present time, will also before many years, require to be renovated. How is all this to be accomplished? To ascertain the deficiencies of the soil—what need to be supplied should be the first step taken.

Very few analyses would be required by reason of the common origin, and consequent similarity of the soils throughout the kingdom. On those portions where the basaltic or volcanic rocks are thoroughly decomposed, the soil appears to be highly argillaceous, and containing iron, in the shape of some of its salts, to a greater or less extent, with little or no vegetable matter. In dry situations, the surface becomes hard and baked, and the evaporation of water is almost instantaneous. Trees and shrubs can be grown by irrigating until they reach a depth which will render them independent of the surface for a supply of water.

The best preparation for sugar cane on such lands, or, I might add, on all, is the application of lime of which the sea beach sands is mostly composed, being made up of comminuted shells and corals. It will enrich the soil beyond the effect of its great fertilizing qualities, by neutralizing the effect of the iron, and rendering the soil more open. The salt which would be introduced along with it is considered of great value in these sugar growing countries, where it can be readily obtained and applied, sugar cane being one of the few plants which benefit by its application. When the soil is not thoroughly decomposed, turning it up and allowing it to remain exposed to the action of the atmosphere would hasten its decomposition, and in a short time afford support to some hardy variety of grass, such as mancarea.

The most serious difficulty to overcome, however, is the want of labor. The great demand, and consequent high price of supplies, in connection with the increased amount of land put under cultivation, has no doubt had the effect to bring about the present scarcity. But there are other causes to which in part it must be attributed, which sooner or later would have produced the same result. The laboring classes of all warm regions, are for various reasons, averse to labor, beyond a supply of their most simple wants, consequently no tropical product has ever been grown successfully to any extent, by free labor. Emancipation has ruined, in an agricultural point, the English and French colonies. I might add also the Spanish American, for the peonage of Mexico secures to the planter all the advantages of slave labor without any of its disadvantages. In Central America, which has been spoken of as a rival to these Islands in the production of sugar and coffee, the price of labor averages about two reals per day,

and little or no security to the employer. On the other hand the value of exports of sugar alone from Cuba, the present year, will exceed thirty millions of dollars, and the crop of the United States will, it is calculated, reach twelve millions, and be doubled the coming year, more than 150 mills being in course of erection.

The non increase, and consequent rapid decrease of our native population, is another cause affecting labor, which is a very serious one in connection with the great increase in demand, which will continue for some years to come. The origin of this difficulty would more properly be treated by our medical members. Is it likely to be arrested? Suppose it were. The number might be sufficient to meet the demand. But here the difficulty arises to which I have referred. How is it to be made available? There may be individual cases, in which the planter, having been long resident and confining himself closely to the superintendence of his own estate, may rub along,—not, however, without considerable wear and tear of temper and patience, which all persons unfortunately do not possess to a sufficient degree. The mass of natives in possession of the kalo patch and *kula are more independent than their wealthy neighbors. They provide themselves and families with all the luxuries of a Hawaiian life, †poi and fish. Though he has no visible means of support, a Hawaiian has always one tangible. The Fourierite system of a community of goods and interests is carried out more fully on many parts of our Islands, than the disciples of that sect would probably submit themselves. What law, then, or system, could you adopt to compel him to work without abridging his freedom. Create wants if you please, they would be supplied by a much less expenditure of labor than would be required of him on a plantation. But a necessity has arisen that our plains be cultivated, for which the skill and capital of the white man are necessary. Should the native refuse to put them in use to render them available by his labor, other hands must and will do it.

If the Hawaiian will not be innoculated with that spirit of progress which appears to be the law of action with the Anglo Saxon race, with whom they now come in contact and competition, they must disappear. Their race will not be the first, nor probably the last to share the same fate. Not all the efforts of our mission friends, nor the ex-

*Kula, uplands. †A sort of paste made by kneeding the baked kalo root with water.

ertions, I might almost say, sacrifices, of our planters, will avail. No greater inducements can be offered to stimulate and arouse the natives than are now before them. Every consideration, moral, patriotic, pecuniary, combine to urge them one step more forward, where they might gain a sure foundation, a permanent position among the civilized nations of the world, a monument to the triumph of modern christianity and civilization. The inefficiency of native labor is another cause affecting the price. The cost of slave labor in the United States averages about 37½ cents per day, producing between five and six thousand pounds of sugar per hand, against native labor at 20 or 25 cents per day, producing from two to three thousand pounds. It may be answered that the amount of sugar obtained from the same weight and quality of cane in the United States, is much greater by reason of the use of more perfect machinery, and improved process in manufacturing. This is counterbalanced in a great measure, however, on the part of our planters, by the privilege they enjoy of choice in the variety of cane grown. The Tahiti cane, as it is called, which I believe is the richest, will not succeed there. Instead of this, they are obliged to select the most hardy, and of the quickest growth, their crop being allowed but nine months. The insufficiency of native labor would be more apparent, should an improved system of agriculture be introduced in connection with proper implements. Yet with all the disadvantages attending native labor, its sure decrease, its high cost, its inefficiency, &c, a remunerating price may be obtained so long as the present state of affairs exists on the California coast, and our planters may rest content. The favorable position of these Islands will also enable them to command a price above the average of other markets for many years to come. The object to be attained however, is the production of the largest crop with the least expenditure of time and labor. The introduction of foreign labor will no doubt afford security to the planter in so far as quality is concerned. Whether it will reduce the cost remains to be proven. The surest means of effecting this most desirable object is, in my humble opinion, by adopting a more improved mode of culture, using skill in connection with labor saving implements, and calling in the aid of science. They have not yet been called into requisition to any extent by Southern agriculturists. Cheapness of labor has been their main dependence. The planters of Louisiana, who, as a body, are as intelligent, if not more

do than any other in the world, are but just waking up to the importance of such aids. Were proof required as to the utility of labor saving implements, I would refer to the Western parts of the United States, which have become the granary of Europe, with labor at from one to two dollars per day, competing successfully with the serf labor of the Danube and Russia. There is great room for improvement in our case, we having within our reach many advantages not possessed by any other planters in the world. The salubrity of the climate will admit of the use of white labor thoughout the year. Another advantage is in the choice of labor, whereby any mode of culture thought proper can be practised, which is denied to slave countries, it being impossible to connect free with slave labor to any extent. The isolated position of our group, too, will, also, when sufficient labor has been attained, have a tendency to render it permanent and secure.

What mode of culture it is best to pursue, must, in some measure depend on the situation of the planter. The substitution of horse or mule teams in place of such as are now in use, is highly desirable, and will become necessary as more land is brought under cultivation. A good breed of working horses should be obtained, which will require grain food. Grass fed horses can no more be expected to do their work than a man made up of poi and fish can be expected to work alongside of a pork fed Yankee. With proper food, one team would accomplish more, I should calculate, even of heavy work, such as breaking up, &c., than two ox teams as now used, and in a more satisfactory manner. In the Southern States the lowest average for growing Indian corn, is 250 bushels for one man and horse, at the rate of 30 bushels per acre. It reaches, however, as high as 1000. We will reduce the lowest amount and call it 200. The amount necessary for a working horse is 30 bushels per year, calculating that for a part of the time, grass feed is made use of. The cost, therefore, of the labor of one man and horse, for the length of time necessary to grow one crop of corn, yields support for a team of four horses one year. Other grains may possibly be grown here to better advantage. With good teams and proper implements, the services of the natives in the cultivation of cane could be dispensed with until he was wanted in the field with his hoe. The skill of the white man properly applied, can in our climate, more successfully compete with rude, uninstructed labor, than in any other tropical country.

These Islands possess advantages which render the growth and production of tropical products possible and profitable by means of free labor, and they consequently hold out inducements to the agriculturists of small means of the United States and Northern Europe, which no other tropical country affords.

By the action of the society just formed, the experience of our planters will be combined, and the best mode of economising labor will be proved. I hardly need say a word in favor of unity among the members of our society as insuring success in its operation. All who have at heart the true prosperity of the Islands must hail its formation as opening up a new era in their history; and as all must benefit directly or indirectly from its operation, so all should be willing to co-operate and contribute to its advancement. Sectional interests and jealousies should be lost sight of, or thrown aside, for we may be sure that any good accomplished, benefitting one interest, must operate favorably on all. The result of your long experience, gained by losses and hard blows, if contributed, may enable your neighbors to increase their crops, consequently enlarge the market, inviting more competition from abroad, and thus enable the producer to obtain the full market value for this crops at all times. The most favorable auspices appear to attend the formation of our society. The result will depend on the cordial co-operation and union of the members.

THE MANUFACTURE OF SUGAR.

By R. W. Wood, M. D.

The visits of the earlier navigators and accompanying events which led to the introduction into the Sandwich Islands of domestic animals, and plants of foreign origin, and also of systematic modes of agriculture, will be interesting, as well as instructive matters of record in the transactions of this association,

We were all no doubt surprised to find ourselves so much interested and entertained by Messrs. Wyllie's and Reynolds's narration of incidents connected with the introduction of animals and plants from

foreign countries, by the first European visitors and settlers upon the islands, the record of which might have seemed trivial to their cotemporaries, but which, now that they have become matters of history, are justly estimated.

He who plants a tree valuable for its wood or fruit, or introduces any new variety, either of the animal or vegetable kingdom, may confer a more valuable legacy upon posterity than he who hoards his thousands, to be dissipated, perhaps, by improvident heirs.

But for Vancouver, this society might this day have been occupying itself with the discussion of the practicability of introducing and growing the orange, which has now become almost indiginous, and forms no inconsiderable item of export. And, did not the Sandwich Islands present so wide a field for emulation, we might almost envy the fame of Vancouver, and even that of the more humble Spaniard Marin, whose meritorious acts although involving no great expense, or personal sacrifices, have deservedly identified their names with Sandwich Island history. But, if much may still be done in the way of introducing new and useful varieties of plants adapted to the soil and climate of the islands, much more remains to be done by the discovery of improved methods of culture and manufacture of existing products. The attainment of this object would be facilitated by instituting a survey of the different fields of individual enterprise, in order to determine what has been attempted and failed,—what has been accomplished by single handed exertions, and especially what may be expected from associated action. There are within the experience of every practical man, facts apparently, it may be, unimportant, but which may have, nevertheless, if noted, an important bearing upon the interests of society, both immediately and remotely. These remarks may suggest to those engaged in the culture of the more important staples of the islands, the utility of journalizing their experience. The value of such journals was suggested to my own mind by the request that I would prepare to be laid before this meeting, a historical account of the introduction, and progressive culture and manufacture of sugar in these islands. For want of time and of the necessary data, I have failed so to do.

I will, however, make a brief statement of such facts bearing upon this subject, as happen to be within my recollection, in relation to a single plantation, with the hope that these may serve as hints to others

in collecting additional statistics, in order that they may hereafter be embodied in a suitable form, to be placed in the archives of the society. The preservation of statistical matter of this kind, may, casually viewed, appear unimportant. Yet, by rendering available to each planter, the experience of his predecessors as well as cotemporaries, much time is saved which is otherwise lost in the repetition of fruitless experiments. Since the commencement of the plantation above referred to, there have been several superintendents, each of whom, neglecting the experience of his predecessors, has persued a routine of unnecessary experiments, at no inconsiderable expense to the proprietors.

It is known to most of the older residents, that about the year 1835, a mercantile house in Honolulu obtained with no little difficulty, a grant of land, on the Island of Kauai, for the purpose of establishing a sugar plantation. Previous to this period some attempts had been made to introduce this branch of industry, but that which has been already alluded to by Mr. Reynolds, is the only one deserving of notice, and that not promising to be productive, was soon abandoned. That on Kauai was the first enterprise of any magnitude of this kind, on the Sandwich Islands. For a period of six years subsequent to its commencement, its failure continued to be confidently predicted by the more intelligent portion of the foreign community.

On this plantation the ground was first broken by a plough drawn by natives. There were no working cattle at that time upon the Island. Wild, or indigenous canes, abundant in the vicinity of Koloa, after three or four months persevering resistance of the **kapu* imposed upon them by the Chiefs of Kauai, were collected, and a nursery commenced. From the first crop of cane obtained, the proprietors succeeded in producing molasses or syrup only. The following season they succeeded in producing sugar, but of inferior quality, and the sugars produced from that estate previously to the year 1842, would now be considered scarcely merchantable.

Previous to the year 1840, two mill sites were abandoned, and the entire works, including buildings, machinery and furnaces sacrificed. A third mill was erected in 1841, which, with improved works, enabled the proprietors to increase considerably the products of their

*Kapu, taboo—probibition of use.

estate, with however but very little, if any, improvement in the quality of the sugars manufactured.

About this time a French gentleman, M. Provost, who had had considerable experience in the manufacture of sugar in the Isle of Bourbon, was engaged upon the estate for the period of one year. In consequence of the improvement introduced by him in the tempering, clarifying, boiling and granulating of sugars, their quality was greatly improved, and their value increased. Previous to the year 1843, in the absence of purchasers, and for the want of nearer markets, the proprietors were under the necessity of shipping, on their own account, their sugars, to Valparaiso, Sydney, and the United States, and they sustained by these operations, a loss of some thirty thousand dollars. Since the year 1843, very little, if any, advance has been made in the improved quality of sugars, although the aggregate quantity produced upon the Islands, has been yearly increasing. Although the present mode of conducting its manufacture is a great improvement upon the rude and unskillful attempts of the pioneers in this branch of industry, yet, owing to the want of better constructed works, and of more skill and experience in constructing them, the business is still prosecuted under comparatively great disadvantages. And thus far the Sandwich Island planters, have been less indebted for their success, to the efficiency of their mills and boiling houses, than they have been to the excellent adaptation of soil and climate to the culture of the cane, to the proximity of good markets, and especially to their exemption from competition with more systematic and skillful manufacturers. In proof of this assertion, I need but refer to the statement made by Mr. Parsons, that it has been ascertained, by a nice calculation, that on a plantation on Maui, the cost of growing was about twelve dollars, and that of manufacturing fifty dollars per ton; whilst in Demerara, the East and West Indies, the cost of growing and manufacturing is considered about equal. It is true that in some of these countries, especially Demerara, where the land requires to be drained by canals intersecting each other in every direction, and where only the spade and hoe can be used, the culture of cane is attended with more expense, than it is in the light mellow soil of these Islands. Still the cost of manufacturing ought not much to exceed that of growing the cane.

The samples of sugar which have occasionally been exhibit-

ed in this market, leave no doubt that the Sandwich Islands are capable of producing raw sugar inferior to none in the world. That the finer samples, however, are more the result of accident, than of any valuable improvement in the manufacture, may be inferred, in as much as by far the larger portion of Island sugar sold in the Honolulu market is but of middling quality. But not only is the quality much below what it might be, but, owing to the want of better constructed works, and more correct information in regard to their proper management, most of the mills now in operation in the different Islands, yield but about one half, and the best but two thirds, the quantity which mills of the same power, with batteries of the same capacity, yield in older sugar growing countries. I make this statement on the authority of a gentleman who appears to be well informed on the subject.

It is a matter which deeply concerns the planters to institute an inquiry into the defects of the present system, and to ascertain what improvement can be made without any great additional outlay of capital, which will increase the efficiency of their works and economise and expedite the manufacture of sugar.

I have given some attention to this matter, but for want of a larger experience I have been able to arrive at no satisfactory conclusions. I will however make a few suggestions with the hope of eliciting information from those who have had better opportunities of observing than myself.

And in the first place, the flues of the batteries now in operation, do not appear to have the requisite height which is necessary in order to secure a draft of sufficient intensity. Some of the flues terminate with the ridge of the boiling house, some rise fifteen or twenty feet above this point, and the highest in the Islands is about fifty feet from the base of the furnace. In the West Indies the usual height of the perpendicular flues are from seventy to one hundred feet.—The degree of heat generated in the furnace is increased with the intensity of the draft, and this depends upon the height of the flues. The horizontal flue after passing under the last boiler, instead of terminating, as is usually the case at this point, should extend about fifteen feet beyond it. Constructed in this manner, the combustion in more perfect, and the object attained of securing a high degree of heat from the least expenditure of fuel. These results have been obtained in part, by adding twelve feet to the flue of the boiling house at Koloa.

No proper grates have yet been imported into the country for furnaces. Pig iron ballast and other refuse iron has been used for this purpose. About 6000 lbs of refuse iron at a cost of some three hundred dollars, has been consumed in the furnace at Koloa in a single season. There is no reason why a set of grates of suitable size and form should not last for years. The position of the grates in the furnace is not unimportant. Instead of being placed at right angles with the long diameter of the furnace, they should be placed parallel with it. Placed across the furnace, they require to be so far asunder, to allow the cinders to escape, that a large proportion of the fuel escapes also, into the ashpit in the form of charcoal, and is lost. Parallel with the furnace, and half or three quarters of an inch asunder, they can be readily cleared of cinders by means of an iron spade.

The most expeditious and effectual means to remedy all these defects, would be to secure the services of intelligent and expert masons from abroad, who are accustomed to this kind of work. There is no work within the province of a mason that requires more skill and judgment than the construction of furnaces and flues of boiling houses. There is one other subject in which the Island planters are immediately and prospectively interested, and that is the reputation of Island sugars in foreign markets.

Previous to 1843, Island sugars were not in high repute. For the last three or four years, they have had a better reputation. Most of those exported the last year have had the advantage in the California market of two or three cents in the pound over those of Manilla and Central America,—the only two countries likely to compete with the Islands. The only raw sugars imported into California the last year in any considerable quantities which were preferred to Island sugars, were those from Pernambuco, and even these were not considered superior to the better qualities of Island sugars. These remarks, however, do not apply to sugar exported from the Sandwich Islands the present year. On account of the unusually high prices of this article in the California market, and the desire of planters to avail of it to the utmost of their ability, sugar imperfectly cured, with all the refuse that could be collected from the drying houses, and which formerly would not have been offered for sale, except at retail among the native population, has, the present year, been exported from the coun-

try, or sold for exportation upon its general reputation and has failed to give entire satisfaction. Island sugars have, consequently, fallen into some disrepute, and are very little more esteemed at this time in the California market, than Manilla sugars.

It is of the first importance to Sandwich Island producers, that they endeavor to secure the highest possible reputation for the produce of their estates, and, in as much as a good character is sooner lost than established, that they do not allow a temporay advance in price, or an increased demand, to tempt them to injure their good name, by exporting, or selling for exportation, unmerchantable sugars.

THE CULTURE OF THE VINE AND TOBACCO.

By Geo. M. Robertson.

There are several branches of agriculture for which these Islands are thought to be admirably adapted, which seem to be discountenanced, or at least neglected, from a prejudice against them. For example, the raising of grapes for making wine and raisins, and the growing of tobacco for making cigars.

Many parts of the Islands, from the volcanic nature of the soil, have been pronounced by persons well qualified to judge of the matter, equal, or perhaps superior to some of the most celebrated wine growing countries in the old world. Vines might be raised to great perfection on many places where our present staple articles of sugar and coffee cannot be grown. We must by no means judge of the capabilities of our genial soil and climate, for vine growing, by the wild, untrained, unpruned specimens which we now see brought to market. Grapes, as well as most other fruits, require care and cultivation to bring them to perfection, and I am informed that there are on the Islands several Portuguese from the Western and other Islands in the Atlantic Ocean, who understand both the mode of culture, and the process of manufacturing wines in those countries. There can be but little doubt that this would prove a very profitable branch of agriculture, if properly followed up.

That we should continue to import so much poor wine from other countries, and pay them for it in hard doubloons, when we can raise our own of a much better quality, is too absurd for me to believe that it will continue so for many years. And not only might we manufacture for our own consumption, but be able to export to other countries. It has been said that the manufacture of wine would lead to habits of intemperance, and perhaps prove ruinous to the native inhabitants. But I believe this argument to be entirely unfounded on fact or analogy. For it is a well known circumstance that in the wine growing countries of Europe, where the inhabitants use it constantly as a beverage, the people are far more temperate then those of England, the United States or Russia. I believe the people of the Hawaiian Islands will begin to show the spirit of true civilization only when they set about developing all the resources of wealth and comfort, and enjoying rationally all the means of happiness, which it has pleased their Creator to bestow upon their country and place within their reach.

In reference to the cultivation of tobacco, I would remark that the tobacco raised on these Islands, is said by the Mexicans and Californians, to be of excellent quality. It certainly possesses a flavor superior to that of two thirds of the cigars imported into our market. It will grow, I think almost anywhere on these Islands. I have seen considerable quantities of it growing in some parts of Hawaii, where I believe it would have puzzled a goat to have found a blade of grass. There are thousands of acres of barren land in this kingdom that are suitable for nothing else that I am aware of but raising tobacco. These lands might be turned to account in this way, and they will be so in a few years, or as soon as those who own such lands begin to wake up to their own interests.

Should either the Government or the Agricultural Society adopt the system of giving premiums for the encouragement of Agriculture and Manufactures, I hope they will not forget to offer one for the finest flavored wine, grown and made within the kingdom, and one, also, for the best domestic segars.

Agriculture and manufactures are in such an embryotic state on these Islands at present that the keenest Yankee who ever crossed the Sierra Nevada, could not guess what the result of skill, enlightened principles and industry will be in the course of time. One thing I

have no doubt of, and that is, that many members of this society will live to sit under their own vine and fig tree, and smoke Hawaiian "long nines."

REMARKS ON FENCES.

By Rev. E. Johnson.

One subject of some importance to the agricultural interests of the Islands, I conceive to be that of fences. The building and repair of fences form a small item in the labors of the New England farmers. There, as in Old England, and other enlightened countries, fences in the form of ditches, hedges, wall or wood, are deemed essential to the protection of cultivated lands. The importance of this subject will doubtless increase in the estimation of the agricultural community, in proportion as the number of landholders increases, and the number of farmers and graziers multiplies. Already has a want of fences in some instances been seen to be a *pilikia of some importance. The grazier is equally interested in this subject with the tiller of the soil, especially if actuated by the "Golden Rule" of loving a neighbor as one loves himself.

In glancing hastily over this subject, I shall attempt to answer briefly the two following questions, viz :—

1. To whom belongs the duty of building and repairing fences.

2. What are the materials best adapted for the construction of fences in this kingdom.

1. To the question to whom belongs the duty of building and repairing fences, a diversity of opinion would doubtless be found to exist. While the planter may contend that his neighbor the grazier should be compelled to keep his animals within their own limits, unaided by himself, the grazier may as warmly contend, if not with as good reason, that the planter should aid him in the labor and expense of enclosing adjoining lands. In enlightened lands either wholesome laws or public opinion settle questions of this nature.

*Pilikia, difficulty.

In New England I believe public opinion, if not the law, decides that persons owning lands adjoining each other, shall share equally the labor and expense of building and repairing fences. This rule would seem to be based on the fact of reciprocity of interest. There, each farmer is supposed to unite the cultivation of the soil with the rearing of flock and herds. That being the case, common sense would seem to dictate that the expense of enclosing adjoining lands be borne equally by the interested parties.

Now when we bring this principle to bear on the state of agriculture in the Islands, we fail, I think, to find that reciprocity of interest that would render the rule admissible here. The tiller of the soil may be inclined to enclose his cultivated lands as soon as the proceeds of his crops will allow, but he surely cannot be expected, in the infancy of his agricultural pursuits, to go to the expense of building one half of the fence that separates his land from the thousands of acres owned by his neighbor the grazier, merely to benefit the latter.

The Hawaiian Legislature doubtless took the same view of the subject when they enacted the law, imposing a fine of $5,00 per head for the trespass of horned cattle upon cultivated grounds. The above law was afterwards altered to read $1,00 per head instead of $5,00. That, I believe, is the law now in force.

Leaving this part of the subject, that admits of much diversity of opinion, to be discussed by those better able to do it justice than myself, I pass to the next subject of inquiry, viz:—"materials best adapted for enclosing lands in the Islands."

Here is a wide field for investigation. But little has been done in experimenting upon the shrubs best adapted for hedges, or by a trial of the best materials for fences.

I have but little or nothing to communicate by way of actual experience on this subject, still I may be able to make some suggestions that shall aid in experiments that may hereafter be made.

On the question, then "what are the best materials for enclosing our lands," I would say, that where stones are handy and abundant a good solid stone wall is the most durable, and in the end, far the cheapest fence. Where stones are abundant, two objects are gained by converting them into a wall, viz:—to remove them from the soil that the plow, cultivator, harrow, &c, may not be obstructed in their

labor-saving work, and also to enclose the land thus cultivated. But, unfortunately, many lands are almost or quite destitute of the durable fencing material, stone. In such case, either ditching must be resorted to, or other materials such as wire, shrubs for hedges, or other wooden materials must be used.

Of the practicability of ditching for enclosing lands, I feel hardly able to express an opinion. It is doubtless worthy of a trial.

As to the comparative cheapness and durability of wire fence, compared with that of wood, I do not know that experience enough has been gained in the Islands to warrant a decision. Indeed I know of only one case where a trial of wire for an enclosure has been made, and that is by our esteemed citizen, Her Britannic Majesty's Consul General, now a resident upon these shores.

For wooden fence, the *ki stick* is much used, and is found to answer to good purposes where free from the larger animals that feed upon its leaves, and destroy its health and its growth. Another material that has been extensively used for fences is the Hau, which I believe is a species of the Hibiscus. The usual manner of construction is this. A trench is dug, from 18 inches to 2 feet in depth, and the sticks of a suitable length placed perpendicularly and compactly together, so as to form two rows in depth, or if the sticks are large a single row is sufficient. This tench is then filled with earth, which is so compressed as to cause the sticks to take root. Where it does take root, its growth is rapid and the limbs sent out from the top in about two years afford material for filling up the portions of the fence where the Hau has decayed. One objection to using the Hau for enclosing arable land, is that the roots branch out nearly a rod on each side of the fence, greatly to the injury of the growth of vegetable production. The difficulty occasioned by the drying away of a part of the Hau sticks may be overcome by twining or intertwining the living twigs across the dry part of the fence, thereby filling up the space. I am indebted to my friend, Thos. Brown, Esq, of the falls of Wailua, Kauai, for suggestions on this subject. Various other shrubs have been at various times suggested as useful materials for hedges. Among them is the Prickly Pear or Cactus. I have tried no experiments with this plant, but I think that it might be used for a hedge on a tolerable dry soil, especially if kept well pruned. A species of prickly mimora and

the lime have both been suggested as suitable for hedges, but I am not aware that a trial has been made of either.

There are several trees that I think might be used for enclosing lands, such as the Kukui or Candle Nut, and an East India tree commonly termed the "Pride of India." I have thought that the Kukui sowed in drills and kept well cultivated would answer a good purpose as a fence. It would require a few years, perhaps three, to get a growth sufficient to make it impenetrable for animals. I am not at all certain that it would answer a good purpose as the nearness to which the trees must stand to each other, would perhaps prevent a sufficient body to answer the purposes of a hedge.

The 'Pride of India' might perhaps be used for the same purpose; and, if not in that near proximity, let it be planted say from three to six feet apart, and after three years growth is attained let durable rails be inserted into the body of the trees, fastened by a nail, if need be, and they would soon become so embedded into the body of the tree as to make a solid fence. These trees would of course become permanent posts, and the limbs would answer for rails, when the first set of rails had become decayed. These are merely suggestions and not the results of actual experience.

Here, with a few remarks, I will close this paper. My object in this brief essay has not been especially to enlighten this society, nor to communicate much information from actual experience, but merely to bring the subject before the minds of this body, who may possibly deem it important enough to elicit discussion from those better able than myself to do it justice.

REPORT RESPECTING THE AGRICULTURAL PROSPECTS OF THE DISTRICT OF HAMAKUA, MAUI.

By A. W. Parsons.

In the district of Hamakua, within three miles of my house, there are one thousand acres of sugar cane, three quarters of which should be manufactured within the current year. At present there are three sugar mills in operation, and five in process of erection. These, when complete, will enable the planters to manufacture at least six

hundred tons of sugar per annum. The average produce per acre has been ascertained to be about one ton. A careful account of the produce and expense of twenty five acres of cane, shows the following result, viz :—cost of planting and raising to maturity, ready for manufacturing, $12 per acre. Cost of manufacturing and shipping to market, including commission for selling, &c., $50. Total expense of raising, manufacturing and selling $62. Avails from sales of the produce per acre, $236. This sugar sold at an average of 10 cents. per lb., the molasses at about 30 cts. per gallon.

There have been raised in this district the past year, at least one hundred bushels of wheat, of a quality equal if not superior to any raised in Western New York. The quantity per acre I have not yet ascertained. Irish and sweet potatoes have been produced in great abundance and perfection, wherever proper attention has been paid to the crops.

Statement of exports from the port of Lahaina to California of domestic produce from Aug. 28, 1849, to Aug 10, 1850:

No of vessels,	55	No of blocks coral,	1,428
" bbls. Irish potatoes,	26,421	" cords wood,	55
" " sweet do,	3,961	" doz. poultry,	22
" " pickles,	535	" " eggs,	504
" pumpkins,	47,640	" swine,	255
" cocoa nuts,	21,800	" sheep,	170
" lbs sugar,	211,408	" feet of lumber,	28,772
" bbls molasses,	612	" lbs. coffee,	8,000
" " syrup,	743	" bbls. beans,	8
" bags salt,	1,812	" water melons,	5000
" bbls. lime,	87	" cabbages,	400
" " onions,	1,203	" lbs. arrow root,	1,600
" " yams	28	" pine apples,	12,000
" " oranges,	3,300		

Total value of the exportations $182,079,37. 108 whale ships have arrived during this time. Each of these ships lay in as stores an average of 50 bbls of Irish potatoes and 500 pumpkins.

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Howe, A. B.
Howland, H. S.
Hubbard, Wm. H.
Hutchins, E. P.

Jarrett, William
Johnson, Ed.
Judd, Gerrit P.

Kapeau, G. L.
Kinney, Henry

Lathrop, Geo. A.
Lawrence, R.
Lewis, Isaiah

MacLane, Wm. A.
Macfarlane, H.
Mactavish, Dugald
Macy, Geo. W.
Manini, F.
Manini, P.
Meek, J.
Metcalf, T.
Monsarrat, M. C.
Montgomery, J.

Newcomb, Wesley

Parke, W. C.
Parker, B. W.
Parker, J. P.
Paki, A.
Parsons, A. W.
Pease, W. H.
Pogue, J. F.

Reynolds, Stephen
Rice, Wm. H.
Rhodes, Godfrey
Rhodes, Henry
Robertson, Geo. M.
Robinson, J.
Robinson, H.
Rogers, Edmund H.
Rooke, T. C. B.
Rowell, Geo. B.

Sawkins, J. G.
Sea, Henry
Smith, Edmund
Snodgrass, W. K.
Snow, B. F.
Smith, J. W.
Smith, L.
Spencer, A. H.
Spalding, J. C.
Sumner, William
Samner, John
Swinton, H. S.

Taylor, T. E.
Thompson, F. W.
Thompson, Saml.
Torbert, L. L.

Vincent, Ch. W.

Whitney, H. M.
Widemann, H. A.
Wilcox, James E.
Wood, J. H.
Wundenberg, F.

Young, James

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NAMES

OF MEMBERS OF THE

ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

LIFE MEMBERS.

French, William
Hubertson, Geo. Frederick
Janion, Robert C.
Kenway, Geo. S.
Lee, Wm L.
Marshall, J. F. B.
Makee, James
Pierce, Henry A.
Pitman, Benjamin
Vida, F. R.
Wood, R. W.
Wyllie, Robt. Crichton
Miller, Wm., H. B. M.'s Consul General.

ANNUAL MEMBERS.

Adams, Alexander
Alexander, W. P.
Alting, Ulrich
Andrews, Lorrin
Anner, W. S.
Archer, A.
Armstrong, R.

Bailey, Edward
Barker, Rob't S.
Bartow, C. S.
Bates, Asher B.
Baldwin, D.
Bishop, A.
Bishop, C. R.
Brickwood, A. P.
Brown, Thomas
Bond, E. P.
Bond, E.
Bowlin, Richard
Burdick,
Bush, A. White

THE

TRANSACTIONS

OF THE

ROYAL HAWAIIAN

AGRICULTURAL SOCIETY:

AT ITS FIRST

ANNUAL MEETING, IN AUGUST, 1851.

VOL. 1. NO. 2.

HONOLULU, H. I.
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PREFACE.

In presenting to the members of the Royal Hawaiian Agricultural Society the Transactions during the first year of its existence, it is due to its members to say, that the First Annual Meeting took place under circumstances of peculiar depression to the agricultural interests of the islands. Under the influence of an active demand, and high prices for the staples of the islands, during the years 1849–50, the hopes of the planters had been raised to a high point, and anticipations for the future, based upon the continuance of those prices and that demand, were of the most brilliant character.

Unfortunately, for a few months before the Annual Meeting, the causes which had operated so favorably upon those interests, ceased to exert their influence. Demand was limited, and prices were not remunerative. The planters, generally, and all that class of agriculturists, not properly called planters, but who depended upon the productions of the soil, in all their variety, felt a degree of solicitude and were so much occupied with their own anxieties that they could not devote the time and attention necessary to drawing up reports, or to preparing contributions for the Exhibition.

It is hoped that these causes will not continue to operate, but that all the committees, officers, and members of the society, will, in future years, make a special effort to contribute, for the information of the society, all the facts, which, although they may appear of trivial importance in themselves, will yet be of value, as the result of actual experience, to those who are still prosecuting their enterprises under the disadvantages of a lack of practical knowledge.

PROCEEDINGS

OF THE

ROYAL AGRICULTURAL SOCIETY.

The society met on Monday, August 11th at 10 o'clock, A. M., in pursuance of adjournment last year; the President, Hon. WILLIAM L. LEE, in the chair.

After reading the proceedings of the last session of the society in 1850, the president submitted a brief report of the proceedings of the society during the year, which was as follows:

GENTLEMEN:—Agreeably with the ninth article of our constitution, in which it is made my duty on this occasion to render an account of the proceedings of our society for the current year, I beg to submit the following report.

One of the most important subjects brought before the society for its consideration, has been that of labor. Under the present system of agriculture in these islands, there is nothing that offers so great an obstacle to success, as the want of a sufficient number of good, faithful laborers. Every plantation requires from thirty to one hundred men, in constant employment, and the impossibility of obtaining the requisite number, has been to many, a serious injury, to others, almost absolute ruin.

To remedy this evil, to a certain extent, the committee on labor, consisting of Messrs. R. W. Wood, J. F. B. Marshall, and Stephen Reynolds, immediately after the last meeting, entered into a contract for the hiring of two hundred Chinese coolies to be delivered in Honolulu, and advanced between nine and ten thousand dollars to ensure their speedy and safe transportation. Unfortunately, the coolies have not arrived, and the experiment of introducing laborers from China, yet

remains to be tested. More labor we must have ; and it is clear that we cannot depend upon the islands for an increase. It only remains then, for us to look abroad ; and I am happy to inform you that a new enterprise to procure coolies is under way, which it is confidently believed will not, like the first, prove a failure. Another branch of this subject of great importance, is the *economy* of labor. This must be accomplished mainly by the introduction of new and improved implements and machines—new modes of cultivation, and a proper and systematic division of our labor. The division of labor in all the arts is found to be of the greatest value, and the same principle holds good in respect to agriculture. I have no doubt that by a judicious division of labor ; by the assigning of certain kinds of work to different classes of operatives, our sugar and coffee planters would save one fifth of all their expenses. It is painful to observe throughout the islands, the general want of *system* in all our agricultural labors. Our operations are irregular ; our implements in many respects unsuitable ; and our machinery, especially our sugar mills, rude and insufficient. In this respect we have not kept pace with our cultivation, and at the present time, I am told there are hundreds of acres of cane going to decay for the want of sufficient machinery to grind and manufacture it into sugar. This is a sad spectacle, and calls for prompt reform. Our little wooden mills—what are they ? A constant aggravation—a screeching nuisance. In many respects some of our boiling houses are but little better. While prices were high, our planters were enabled to make money, notwithstanding these rude structures ; but they will not meet the demands of the future. It will be answered "We have not the capital to remedy this evil." This is true, and I deeply mourn the fact ; but nevertheless, the deficiency must be supplied in some way, either by increased industry and economy, or by importation from abroad, else the cultivation of our fields will be in vain. The whole subject of the economy of labor, by the improvements of our machinery, our implements, and otherwise, has occupied the attention of the Board of Managers to some extent, and yet little advance has been made in this line, beyond the exertions of individual members of the society. Horses and mules, ploughs and cultivators have, to a considerable extent, taken the place of the native and his hoe, and it is hoped that this reform will speedily become more general.

The introduction of new seeds and plants, and of extended information respecting agriculture, has received a large share of consideration. Several boxes of seeds have been received and gratuitously distributed, and the amount of two hundred and seventy dollars has been sent abroad for agricultural books and periodicals. Some of these works are on their way, while others, of much value, have already arrived, and are now in the hands of our corresponding secretary.

One of the most important interests under the care of the society, is that of grazing. Our high lands are peculiarly well adapted to pasturage ; and I doubt if the graziers in any part of the world have been more successful than in these islands. With no winters to contend against, their labors are comparatively light—the increase of their flocks certain and rapid—and the owner of a small herd is sure, with a reasonable degree of care and attention, to become wealthy in a few years. Beyond question the raising of cattle, has, thus far, been the most successful pursuit connected with the soil, yet undertaken in the islands. The several members of our committees on neat cattle, horses, sheep and swine, have made creditable exertions to improve our stock, by the purchase of animals imported from the British Colonies and the United States, and, I trust, our exhibition of animals will show, with some success. It is a source of great pleasure to me to be able to say, that some of our best graziers have begun to introduce the English and American system of penning and domesticating our cattle, and training them for labor and the dairy. This is the commencement of a most desirable reform, and I hope ere many years, to witness the entire abolition of the brutal old Spanish system, of hunting our cattle to death with the horse and lasso. Another great evil, in connection with this subject, both as it regards graziers and planters, is the overstocking of our pastures, and the almost universal want of fences. Instead of keeping our herds reduced to a reasonable number, they are in some instances allowed to increase to an alarming extent, and thousands of half-starved creatures are seen ranging over the country destroying everything within their reach. All interests suffer from this evil, and he who shall discover a remedy by introducing some cheap and durable fence, or otherwise, will prove a public benefactor.

The Legislature has responded to our call for assistance, by granting us a portion of the fort lands in the vicinity of Honolulu, not to exceed

fifty acres, for a public nursery for plants ; and by appropriating a sum for premiums equal to that raised by the society ; provided, however, that not more than five hundred dollars shall be drawn from the Treasury for this purpose in any one year. This liberality on the part of the government, deserves our thanks, and we must not suffer these benefits to go unimproved. A public nursery, where new and valuable plants could be raised and sold, or gratuitously distributed, would be a great blessing to this country ; and I doubt not, but we shall be able to procure the services of some person to undertake the enterprise, by giving him the use and profits of fifty acres of land in the immediate vicinity of our great market.

The donation for premiums, is as politic as it is liberal ; for by encouraging agriculture and increasing the products of the soil, the government swells it revenues, more than it adds to the stores of the cultivator. What is appropriated for premiums as a means of stimulating the exertions of our agriculturists and graziers, is but money loaned at good interest, and on the best of security. In England, Scotland, and the United States, the distribution of premiums has been the means of great reforms in the modes of cultivation ; of vast improvement in stock, and in the line of new implements and labor-saving machines, it has almost worked miracles. However, premiums must be distributed with judgment or they fail of their object. I feel confident that five hundred or a thousand dollars per annum, judiciously expended in this way by our society would do much to rouse and stimulate both natives and foreigners to increased exertion.

The society has not been idle on the subject of improving our public roads, inter-island navigation, and harbors. The members of the committee having this subject in charge, have exerted themselves in a most laudable manner in procuring appropriations for the improvement of our highways, and in diffusing useful knowledge relating to this matter. The effect of their labors is beginning to be felt ; and as the worthy chairman of this committee has recently received the appointment of Superintendent of the Bureau of Internal Improvements, it may be expected that the public channels, and facilities for transportation will be multiplied, and greatly improved. There is a fair prospect of our soon having steamers plying between the islands, and it is hoped that this event will prove a new spur to agriculture, if not a new era

in our history. No fact is better established, than that the nearer you carry a market to a man's door, by rapid communication, or other means, the more vigorously he will exert himself to increase his products.

I hope, in the brief survey I have given, of some of the proceedings of the society for the current year, there will be found nothing to discourage us in our labors for the year to come. Our beginning has been an auspicious one, and let us strive to make our future support the promise of the past. That the society if well sustained, is calculated to enrich the country, and add to the comforts and blessings of its inhabitants, I think no one will deny. It is worthy then of our best exertions. The paucity of our numbers, is no reason why we should despond. The fewer we are, the more strenuous should be our efforts. To support any association in these islands is well known to be no easy matter. Men give their money, for private or public good with a generosity I have never seen equalled ; but, absorbed in the daily pursuits of their business, they will not freely grant the aid of their thoughts, their counsel and their time. Some are opposed to the very name of association, and will not support one in any form. Others again are indifferent to all societies which do not promise a direct and present gain ; while another class, composed for the most part of strong-minded, sensible, and useful men, say, "away with your theories, your book-knowledge, and your preaching, and give us more experience and practice." With these difficulties to encounter, it is no light task to keep up, and advance with heart and spirit. If we would flourish, we must have the individual exertions of all our members, and the countenance of every class, the farmer, the mechanic, and the merchant. The present time is one of distress among our planters, and the trouble and expense of visiting Honolulu, superadded to their embarrassments, will no doubt prove a temporary obstacle to our progress. We are assured, however, that though some may not be able to attend our meetings, all are with us in heart. If ever we needed to come together and unite our efforts for the promotion of our cause, and to extend our aid, sympathy and support to each other, it is now. That our planters will eventually flourish I consider certain ; and the present misfortunes should, by no means, be charged exclusively to the account of agriculture. Many of our best planters flushed with

the success which formerly attended shipments to California, have neglected their plantations, and launched upon the untried and fickle sea of commerce. The former high prices of our products induced a spirit of wild speculation, which has been attended with sad disappointment. Let us profit by the past—anchor ourselves at home; and leave commerce to our merchants. California, the great market of the Islands, is now paralized; and the immense importation of sugar and other products from Manila, China, and elsewhere, has reduced the prices of most articles of our produce below their prime cost. But this state of affairs cannot last long, and let us prepare for the better times which are surely coming. With our genial climate and virgin soil, we can successfully compete with any part of the world in sugar and coffee. I am told by those that speak from experience, that we can produce better sugars than any made in Manila, at a price ranging from two to three cents per pound. If this be so, where is the obstacle to our prosperity? Our agriculture is yet in its infancy. Almost every enterprise, calling for labor and capital, especially when commenced in a country so new and remote, is attended with difficulty, and loss; and often indeed does the hard-working pioneer but toil and plant, that those who come after him may reap. We have gained much light from the experience of those who have gone before us, but still are we not, to some extent, spending our treasure and our strength, delving where we cannot clearly see? Though this is a motive for increased exertion, let it not prove a source of discouragement. Let us as members of this society bend our whole strength to direct our energies aright—to assist the hard toiling tillers of the soil—to insure them the fruit of their labors; and to promote the wealth, prosperity, and happiness of the nation.

On motion of Stephen Reynolds, it was voted:—That the thanks of this meeting be extended to the President for his able report, and it be printed with the transactions of the society.

The Treasurer submitted his report, which was accepted, and is as follows:

FIRST ANNUAL REPORT

OF THE TREASURER OF THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

Honolulu, August 11, 1851.

To the Hon. Wm. L. Lee,

President of the R. H. A. S.

SIR,—I have the honor to represent to you that since the formation of this society up to the present time, the receipts and disbursements have been as follows, viz :—

RECEIPTS.

Cash for 117 Certificates of Annual Membership,	$585 00
" " 18 " " Life Membership,	650 00
Amount of Bill for printing and binding 750 copies of the first number of the Society's Transactions, assumed by the Hawaiian Government.	209 75
	$1444 75

DISBURSEMENTS.

Paid Bill for Letter-press and Stationery,	$ 43 00
" " for printing Circulars - - -	4 00
" to E. P. Bond, Esq., to be sent to Great Britain, the United States, and China, and invested in Publications, Books, and Silver Cups for Premiums.	395 00
Invested in Bond and Mortgage on acc't. of the Society. - - - - - -	500 00
Paid for collecting—and loss on money	1 38
Amount of Polynesian office's Bill for Printing and Binding, as above - -	209 75
Balance Cash on hand - - - - -	291 62
	$1444 75

Mr. S. N. Castle, the former treasurer, resigned his office on the 31st of May on account of his intended visit to the United States, and delivered up the books, papers, and cash in his hands, and rendered an account current with the society, which is hereto annexed. I had the honor to be appointed treasurer by the Board of Managers, on the 30th of June last, and received the balance of cash ($291 62) named above, which is now in my possession. Respectfully submitted by

Your ob't servant,

C. R. BISHOP, Treasurer.

The society then proceeded to the election by ballot, of a committee of five to take charge of the exhibition of productions, stock, &c., and to award the premiums to the successful competitors. Messrs. Marshall, Torbert, Miner, Rice, and Meek were elected said committee.

On motion of J. F. B. Marshall—Resolved, That the thanks of this society be to tendered George Frederick Dickson, of London, and George W. Bond, of Boston, for their exertions in behalf of the society; and that George W. Bond be constituted a corresponding member of the society.

Resolved, That the society meet on Tuesday, at 12. m., to examine specimens of products and stock.

On motion—The society adjourned to meet at half-past 7 o'clock p. m., at the chapel, to hear the Annual Address of Hon. L. Severance.

Meeting at the the Chapel.—A large audience, in addition to the members of the society, met at the Chapel. Hon. L. Severance being introduced by the President, delivered an able and eloquent address.

On motion of Mr. Castle, the thanks of the society were tendered Mr. Severance for his able address, and a copy of the same requested for publication.

On motion, adjourned to meet at 12 m., to-morrow.

At 12 o'clock on Tuesday a large number of ladies and gentlemen assembled at Mauna Kilika, to inspect the articles presented for exhibition; and although meagre compared with similar exhibitions in more advanced countries, still we are far from being disposed to undervalue the "day of small things." The *quality* of the stock, vegetables and staples exhibited, is a gratifying indication of what a more full development will accomplish. Wheat, oats, sweet and Irish potatoes, corn, sugar cane, coffee, cocoa, onions, carrots, beets, parsley, radishes, kalo, peas, turnips, grapes, figs, an apple, a peach, pomegranates, water melons, granadilla fruit, arrow-root, butter, eggs, sugar, woolen cloth, syrup, leather, boots and shoes were exhibited, and among the stock, horses, cattle, sheep, and monstrous swine came in for a full share of attention. A few beautiful boquets also graced the collection. While we do not attempt to designate every article of interest which we noticed, we cannot refrain from specifying the wheat, corn, Turkey figs, pomegranates, carrots, radishes, peas, turnips, and Irish potatoes, as unusually fine specimens.

REPORT OF THE COMMITTEE TO AWARD PREMIUMS.

Your committee submit their report with much diffidence, and ask for it your kind indulgence. They have labored under embarrassments, which will not, we trust, exist another year, from the want of proper prizes to distribute, and proper instructions as to the manner of their distribution. But a small portion of the amount sent to China to be invested in plate, medals, &c., for prizes, was so invested, and the books which were ordered for premiums have not reached us. We have used our best judgment in the distribution of these prizes which we have, and in regard to the other premiums, we desire instructions from you. We would advise, however, that a money premium be named, which may be given to the parties, to whom they are awarded, or if such parties prefer, that suitable books, or medals, be ordered in their stead.

The display of stock, produce, flowers, &c., though small, was as large as could be expected perhaps, at this period of general depression. We were glad to see the general interest which seemed to be taken in the exhibition, meagre as it was, by all classes, and we confidently believe that at our next annual meeting, a very creditable and full display will be made.

The display of neat cattle was very small, but of choice stock. No working oxen or cows were exhibited, though we have seen some on the islands that will compare favorably with those of any other country. Some fine geldings were entered, and several stallions and mares, which two latter, however, being of foreign importation, were not entitled to premiums.

Some fine sheep and swine were exhibited. But very few fowls, which is somewhat remarkable, as some fine varieties of the Shanghae, Malay and native breeds could have been shown, and this branch of stock is of no small importance in the supplies furnished to vessels trading at these islands. No turkeys or ducks were exhibited.

Good specimens of sugar and coffee were shown.

The show of vegetables and fruits was small and might have been much greater from Honolulu alone. Another year will, we trust, exhibit a great improvement in these branches, as well as in the display of flowers, of which, however, a few choice specimens were sent in by the ladies. Some excellent specimens of boots and shoes made from

native leather, were exhibited, and some sole leather, in which we noticed that much injury was done to the leather by the barbarous practice of branding with huge and clumsy brands, which burn deep into the hide and injure it for tanning.

Some woolen cloth of good texture was exhibited.

The following is a list of premiums awarded by your committee :

STOCK.

1. For the best Bull, a silver cup, to John Meek.

2. For the best Steer, for slaughtering, a silver medal to John Meek.

3. For the best Steer, for slaughtering, second premium, a silver medal to Paul Manini.

4. For the best Gelding, a silver cup to Thos. Cummings.

5. For the best Gelding, second premium, $5, to John Meek.

6. For the best breeding Mare, a silver medal, to Thomas Cummings.

7. For the best Sheep, a silver cup to James I. Dowsett.

8. For the best Sheep, second premium, $3 to David Adams.

9. For the best Sow, first premium, book, Colman's Agriculture, to John Meek.

10. For the best Sow, second premium, $3, to A. Paki.

11. For the best Cock and Hen, to P. J. Gulick, $5.

12. Best Geese, W. C. Parke, $3.

SUGAR.

13. For the best cwt. of Sugar, first premium, a silver cup, to A H. Spencer.

14. For the best cwt. of Sugar, second premium, $5, to L. L. Torbert.

15. For the most productive acre of Sugar Cane, as per certificates accompanying, a silver cup, to L. L. Torbert.

16. For best Sugar Cane, 15 sticks from one hill, $3, to G. A. Lathrop.

17. For largest and best varieties of Cane, $5, to L. L. Torbert.

18. For the best Syrup, a silver medal, to L. L. Torbert.

COFFEE.

19. For best Coffee, in parchment, a silver cup, to Benjamin Pitman.

VEGETABLES AND FRUITS.

20. For the best Irish potatoes, L. L. Torbert, $5.

21. For the best Sweet potatoes, Benj. Pitman, $5.

22. For the best Kalo, a silver medal to Z. Kaauwai.

23. For the best assortment of garden vegetables and fruits, first premium, tomatoes, carrots, radishes, beets, and musk melons, a silver medal, to J. Montgomery.

24. For the best assortment of garden vegetables, second premium, a diploma, turnips, green peas, and cucumbers, to James Makee.

25. For the best specimens of pine apples, B. W. Parker, $3.

26. For the best assortment of mangoes, a diploma, to Paul Manini.

27. For the best granadillas and water melons, Mrs. John Paty, $2.

28. For the best granadillas and water lemons, second premium, diploma, Mrs. A. B. Bates.

29. For the best pomegranates, diploma, William Miller, Esq.

30. For the best peach, on a tree 2 years and 4 months old, Diploma, R. C. Janion.

31. For the best bananas, first premium, L. L. Torbert, $3.

32. For the best bananas, second premium, J. Kaauwai, diploma.

33. Figs, fresh A. Paki, $3.

34. Figs, dried, J. S. Emerson, $3.

35. Corn, J. S. Emerson, $5.

36. Onions, B. Pitman, $4.

37. Cocoa, P. Manini, $4.

37. Butter, first premium, Miss M. M. Smith, $5.

38. Butter, second premium, Thos. Brown, $3.

39. Boots, shoes, and leather, a silver medal, J. H. Wood.

40. 20 yds. woolen cloth, a silver medal. The sheep raised, the wool shorn and woven, by Jos. Gardener, Kauai.

41. Flowers, first premium, Mrs. J. Makee, $4.

42. Flowers, second premium, Mrs. Penhallow, diploma.

43. Arrow root, B. Pitman, a silver medal.

44. Wheat, best bushel, J. S. Green, silver medal.

45. Oats, best bushel, J. S. Green, 4$.

46. Eggs, R. C. Janion, first premium, $4.

47. Eggs, Mrs. Paty, second premium, diploma.

Samples of sugar from Koloa, were exhibited, also some made by

Captain Perry at Maui, in an old try-pot, both of fair quality. Some fine figs of the Turkey variety, from a cutting planted only last February, and had borne this year fifteen figs, was exhibited by B. F. Snow, Esq., also by R. C. Janion, Esq., of the same variety, 9 months old, and but 12 inches high, which had 25 figs upon it. An apple from a tree 4 years old, was exhibited by A. Paki, Esq.

Choice varieties of flowers by Mrs. G. P. Judd, R. C. Janion, Esq. and Miss Emma Smith.

Your committee hope that more attention will be paid next year to the exhibition of Agricultural implements. In this branch our merchants would have a good opportunity to display their stock, and the planter would know where to look for those implements of which he was in need. The only articles in this department were, a patent thermometer churn, and Emery's patent seed planter, which were exhibited by W. Chamberlain.

The number and value of premiums distributed is large compared with the means of the society. Your committee would however recommend, that if our means will allow, a still larger amount be expended in premiums for next year. They believe that by the competition thus awakened, the members will be stimulated to greater exertions, the interest in the prosperity of the society much increased, and great improvements shown in all the branches of agriculture which it is the design of this association to foster.

All which is respectfully submitted.

J. F. B. MARSHALL, Chairman.
L. L. TORBERT.
E. MINER.
JOHN MEEK.
WM. H. RICE.

Evening Session, Aug. 13.—The secretary being absent, Mr. E. O. Hall was chosen secretary, pro. tem.

The committee on agricultural implements made no report, but in lieu thereof, read several letters, in answer to a circular issued by them to planters and others.

The committee on seasons reported, through their chairman, J. S. Emerson.

An interesting communication was read from J. H. Wood, on the subject of domestic tanning, leather, &c.

A communication was read by Mr. L. L. Torbert, on the subject of sugar, cane-planting, &c., also giving some very encouraging statistics on the subject of the expense and proceeds of an acre of sugar-cane, grown and manufactured on his plantation.

The reports of standing committees having been completed, the society proceeded to the election of officers for the ensuing year, when the following were duly elected:

Hon. Wm. L. Lee :—*President.*

G. S. Kenway, Hawaii,
Ben. Pitman, "
L. L. Torbert, Maui,
S. G. Dwight, Molokai,
S. Reynolds, Oahu,
J. F. B. Marshall, Kauai,
} *Vice Presidents.*

Chas. R. Bishop, *Treasurer.*

John Montgomery, *Corresponding Secretary.*

Edwin O. Hall, *Recording Secretary.*

W. Newcomb,
R. W. Wood.
S. N. Castle,
R. C. Janion,
B. F. Snow,
} *Executive Committee.*

Adjourned to Thursday morning, at half-past 9 o'clock.

Thursday, August 14, 1851.

The society met at half past nine, the President in the chair.

The committee on poultry submitted their report, through their chairman, Mr. E. H. Rogers.

On motion of R. H. Bowlin it was resolved that the standing committees for the ensuing year be appointed by the President; whereupon the following were appointed as committees for the year to report at the next annual meeting.

On Poultry.—R. C. Janion, *Chairman*, E. H. Rogers, J. Montgomery.

To Collect Statistics.—R. C. Wyllie, *Chairman*, B. Pitman,

G. S. Kenway, Preston Cumings, L. L. Torbert, J. T. Gower, C. R. Bishop, F. Wundenburg, George Gilmore.

On Horticulture.—A. B. Bates, *Chairman*, H. M. Whitney, Thomas Brown, E. H. Rogers, John Montgomery.

On Sugar and its Manufacture.—L. L. Torbert, *Chairman*, R. W. Wood, G. A. Lathrop, J. F. B. Marshall, J. T. Gower.

On Coffee.—G. Rhodes, *Chairman*, T. C. B. Rooke, B. Pitman, P. Cumings, A. Archer.

On Labor.—S. Reynolds, *Chairman*, J. F. B. Marshall, R. W. Wood, R. J. Hollingsworth.

On Analysis of Soils.—W. H. Pease, *Chairman*, W. Newcomb, T. C. B. Rooke.

On Worms and other injurious Vermin.—W. Newcomb, *Chairman*, J. T. Gower, J. G. Sawkins, W. H. Pease.

On Roads, &c.—E. P. Bond, *Chairman*, T. Metcalf, G. M. Robertson, Wm. Webster.

On Agricultural Implements.—R. C. Janion, *Chairman*, R. Armstrong, C. W. Vincent, W. H. Rice, W. Chamberlain.

On Neat Cattle.—John Meek, *Chairman*, C. G. Hopkins, H. Sea, Robert Moffat.

On Horses.—T. Cummings, *Chairman*, S. Thompson, John Meek, John O. Dominis.

On Sheep.—G. S. Kenway, *Chairman*, T. Cummings, J. I. Dowsett.

On Swine.—P. J. Gulick, *Chairman*, A. Paki, Z. Kaauwai.

On Seasons.—J. S. Green, *Chairman*, J. S. Emerson, E. Bond, H. R. Hitchcock, J. W. Smith.

On Fences.—R. J. Hollingsworth, *Chairman*, E. Johnson, H. A. Widemann, R. G. Davis.

On Trees, Grapes and Curing Hay.—G. P. Judd, *Chairman*, D. Duncan, E. Bailey, W. H. Pease, H. M. Whitney.

On Garden Seeds and Fruits.—R. H. Bowlin, *Chairman*, J. Montgomery, B. F. Snow.

On Food for Laborers.—J. T. Gower, *Chairman*, A. H. Spencer, S. Burbank.

On motion of Mr. Marshall,—Resolved, That a committee be appointed to institute experiments with a view to obtain plants from the

seed of the sugar cane, and to procure information on this subject.

The committee appointed were, E. P. Bond, *Chairman*, D. Baldwin, G. A. Lathrop, B. Pitman.

Resolved, That a committee be appointed to procure the HONEY BEE from Australia, Central America, or Chile, who are authorized to incur the necessary expense. R. C. Janion, Chairman, Baron de Thierry, J. Montgomery, were appointed.

Resolved, That a committee be appointed to procure a variety of INSECTIVEROUS BIRDS, and they are authorized to incur the necessary expense, L. Severance, Chairman, W. Newcomb, A. B. Bates, D. McTavish, were appointed.

Resolved, That a committee be appointed to introduce new species of FISH at their discretion, R. C. Janion, Chairman, W. A. Howard, D. McTavish, were appointed.

Resolved, That a committee be appointed on the subject of LEATHER, TANNING, &c. J. Hardy, Chairman, J. H. Wood, A H. Spencer, Wm. French, were appointed.

Resolved, That a committee be appointed on MANUFACTURES. Mr. Weston, Chairman, J. H. Wood, J. F. B. Marshall, were appointed.

Resolved, That a committee be appointed on Wheat, Corn, Oats, and other grains with instructions to inquire into the adaptedness of our soil for such grains. J. S. Emerson, chairman, J. S. Green, J. T. Gower, T. E. Taylor, Wm. H. Rice, were appointed.

On motion of Mr. Wyllie, Resolved, that a committee be appointed to inquire into the subject of CAPITAL, and in regard to the establishment of a bank of discount and deposit, to report next year. R. C. Wyllie, chairman, A. B. Bates, James Makee, L. Severance, S. N. Castle, were appointed.

A communication was read by Mr. Hollingsworth, on the subject of labor, and a copy left for publication in the Transactions.

Mr. R. H. Bowlin introduced the following Preamble and Resolution, which was seconded by Mr. Wyllie, and made the order of the day, after the current business of the Society had been transacted.

Whereas, our planters are suffering, and our sugar plantations languishing from the depressed state of the sugar market both here and on the coast of California, and Oregon, and

Whereas, under the present high prices of labor on these islands,

and the imperfect means of manufacturing sugar, our planters find it difficult to compete with the cheap sugars of Manila and China, and

Whereas, a large per centage of the raw material on all the sugar plantations is thrown away and wasted, because the planter is prohibited by law from manufacturing it into the only product it is susceptible of being converted into, for purposes of commerce; therefore be it

Resolved, That this society recommend to the next Legislature the passage of a law permitting the planter to manufacture his bagasse, skimmings and refuse sugars into spirits, surrounded by such restrictions and safe-guards as shall prevent the consumption of any portion of the same on this group.

Adjourned to 3 o'clock, P. M.

Afternoon session, August 14th.—Met according to adjournment.

On motion of Mr. Andrews—Resolved, That any person who shall introduce into the islands any new plant, shrub, or tree, beneficial to the country, is invited to report such introduction to the secretary, who shall record the name of such individual in the annals, with the date of such introduction.

Resolved that a committee of three be appointed on the subject of BUTTER AND CHEESE. B. W. Parker, Chairman, J. P. Parker, Thomas Brown, were appointed.

Resolved that a committee of three be appointed on the VINE AND FIG, with special reference to their preservation for export. E. Bailey, chairman, T. E. Taylor, G. B. Rowell, were appointed.

Resolved, That it shall be the duty of the several committees to communicate to the chairman of such committee his individual report on the subject for which such committee was appointed, at least one month before the annual meeting of the society.

Resolved, that a committee be appointed on PREMIUMS for the next year, whose duty it shall also be to order and distribute the medals to be given in place of the money premiums awarded this year, and that the committee shall specify the particular premiums for particular articles. J. G. Sawkins, chairman, James Makee, A. B. Bates, G. A. Lathrop, H. M. Whitney, were appointed.

Resolved, That the Board of Managers be empowered to locate and manage the lands granted by act of Legislature to the Royal Hawaiian

Agricultural Society, according to their best judgment and discretion.

Resolved, That when this society adjourn, it adjourn to meet on the first Tuesday in June, 1852.

Adjourned to Friday morning, at 9½ o'clock.

Friday morning, August 15th.

The committee on NEAT CATTLE made their report, which was read and accepted.

Dr. John Rae delivered a lecture on Geology before the society. Thereupon, Resolved, That the thanks of this society be tendered to Dr. Rae, for his lecture before them on the subject of Geology.

The society proceeded, (S. Reynolds, Esq. in the chair), to the consideration of Mr. Bowlin's preamble and resolution, on the subject of allowing the distillation of spirits by the sugar planters of the islands. A lengthened and animated discussion ensued, in which Messrs. Bowlin, Sawkins, and Dr. Newcomb advocated the passage of the resolution, and Messrs. Lee, Clark, Castle, Gulick, and Taylor, opposed it. The subject was still under discussion when the society adjourned to 3 o'clock, P. M.

Afternoon session, August 15th. Met according to adjournment.

The discussion of Mr. Bowlin's resolution was resumed and advocated by Messrs. Sawkins, C. C. Harris, and Bowlin, and opposed by Messrs. Castle, Lee, Severance, Gower and Taylor. The question was taken upon the resolution, and lost by a large majority. This discussion was conducted in the most courteous manner; and although a question of vital importance, and one so regarded by all who took part in its discussion, the calm and deliberate manner in which it was handled, was highly creditable to those who spoke.

A communication was read by Mr. Sawkins, on the subject of trees, fences, salt and labor, and a copy left for publication in the transactions.

Resolved, That a committee be appointed on the subject of SALT and the PEARL OYSTER. J. G. Sawkins, Chairman, C. W. Vincent, W. Newcomb were appointed.

Resolved, That a committee on printing be appointed. E. O. Hall chairman, J. Montgomery, E. H. Rogers, were appointed.

Resolved, That the Treasurer be authorized to pay Dr. John Rae

the sum of $30 for his lectures on Geology delivered before this society.

On motion, Voted to adjourn to the first Tuesday in June, 1852.

ADDRESS

Delivered by Hon. Luther Severance.

Doubtless I ought to apologise for my temerity in consenting to deliver the annual address, for this year, before the Royal Hawaiian Agricultural Society. Almost any one else, of your members, may be presumed to have more knowledge of agriculture, generally, and much more of that which is applicable to these islands. What I may say, therefore, you will consider as evidence of my desire to promote the great object you have in view, rather than as a valuable contribution to that end.

I have derived much information from the volume published last year, by the society. It is seldom, I think, that any similar institution has, any where, been commenced with more flattering auspices, or produced in the outset so many judicious and able essays. I trust those gentlemen who contributed them, however, will not think their duty has all been performed, but will continue to give the society, annually if not oftener, the result of their observations, experiments, and reflections.

Fortunately the most enlightened nations have at last so far advanced in civilization that they have begun to appreciate the dignity and importance of agriculture, and to perceive that no branch of science affords a wider field for human research, or one in which patient and scientific investigation may be rewarded with greater benefits to mankind.

From time immemorial the best energies of the race have been worse

than wasted in wars. The road to Fame has lain through sacked and ruined cities, and harvests trampled under foot by contending armies. The poets and historians of antiquity tell us of the heroes who figured in the work of human slaughter, and the orators whose eloquence aroused the multitude to arms ; but they tell us little or nothing of the men who made improvements in tillage, or of inventors in the mechanic arts. They tell us of Isthmian and Olympic games, and Amphyctionic councils, but they tell us little of inventors and nothing of agricultural societies. The most famous of the former, (Archimedes), attracted attention chiefly by his machinery used in the defense of the city of Syracuse, besieged by the Romans. If he invented any labor-saving machinery in tillage, the historians of his time have not deigned to mention it.

Agriculture and the mechanic arts were abandoned to slaves and menials, throughout the long career of Greek and Roman greatness, as they were generally in countries more barbarous, or less enlightened. And this state of things continued throughout Europe during the middle ages ; and indeed up to this time, the peasantry of some of the countries of Europe are still in complete vassalage, and in others they are practically so to a great extent. Hence there could be no other than a very imperfect cultivation of the soil. Under the feudal system the peasant, who did not own the land he cultivated, would of course, do little to enrich and embellish it, if he had the requisite taste ; and the owner who was generally a "Baron," or "Military Chieftain," could not spare the money from his coffers to fertilize and adorn fields which might be devastated by his enemy, nor lay up stores of grain which might be carried off by victorious marauders. Hence between the results of bad tillage, and the desolations of war, Famine appeared frequently, and Pestilence followed in her ghastly train, to sweep off those whom the sword had spared. Population increased slowly, and sometimes rapidly decreased in places afflicted with more than usual severity. The very slow aggregate increase in all Europe for a thousand years is in striking contrast with the increase in western Europe, and especially in the United States, within the last half century, though this period has not been free from wars. In the last sixty years, from 1790 to 1850, the U. S. increased from less than four millions to twenty three millions. There is nothing like this in Europe, and never has

been; indeed a part of this American increase is by emigration from Europe; and yet the very countries from which there has been the greatest emigration, have increased their population, in the last half century, out of all proportion with previous times. The population of Great Britain and Ireland was in

	1700.	1801.	1851.
England and Wales,	5,000,000	8,870,000	18,000,000
Scotland,	1,000,000	1,560,000	2,870,000
Ireland,	2,000,000	5,000,000	8,130,000
	8,000,000	15,430,000	29,000,000

Thus it will be seen that notwithstanding the great emigration from England, Scotland and Ireland, to America, Australia, and elsewhere during the last half century, (much greater than ever before,) the increase has been as great in the last half century as in a whole century before, and greater no doubt than in any previous century, though we have not the statistics for an exact comparison.

Increase of population is not an exact indication of comfortable living, but it is better than any other for the statistics. Such increase may be retarded by luxurious excess, and licentious indulgence, as well as by scanty and bad fare, and poor lodgings; but it is in most countries the rich few, who are the sufferers by excess, while it is the impoverished many who suffer by famine. We hear of great sufferings, severe labor, and scanty pay in British collieries, mines and manufactories, and even in agricultural districts, and of miserable poverty and destitution in Ireland; yet the great increase in the last half century shows that there must be better cultivation and more domestic comfort than in previous times. In Walsh's journey from Constantinople to England, in 1820 by way of the Danube, he says it was not until he reached a town in Transylvania, that he found any potatoes. He found the peasantry of Moldavia, Wallachia and Croatia clothed in sheepskins in summer, and living in miserable hovels, which scarcely sheltered them from the weather. They were supplied with few vegetables of any kind but living upon coarse black bread, and the milk of their flocks and herds. Their predecessors, the Dacian hordes, who over-ran Rome, under Attilla, probably lived no better, if not much worse, a thousand years ago, and their agriculture of course

corresponded with their condition. If they had anything like a plough, it was doubtless a very clumsy contrivance, and all their agricultural tools were of similar utility. There has been a striking improvement in agricultural tools in our own times, though less than in spinning and weaving. Could old Cincinnatus rise from his grave and see one of the most approved ploughs, of the present day, he might be tempted to use it all the time, and would perhaps, hardly be satisfied with the limited extent of his farm of four acres. It would be interesting to know what sort of a plough it was, to which the prophet Elisha had hitched his twelve yoke of oxen, when he was called from his laborious vocation, to receive the mantle of Elijah. Either the cattle must have been very small, or the plough a poor one. It could hardly have been more cumbrous, or inefficient than that which is used in the same country at the present day, so little progress has been made in any of the arts, and especially in tillage, in that part of the world.

Among the inventions of modern times is one which has shortened human life, and caused much misery. It is the art of distilling alcohol; but this has been far more than balanced by a better knowledge of medicine and surgery; better houses to live in; better clothing; a greater variety, and greater abundance of food, animal and vegetable particularly of the latter; for the last century has brought into use a great number of vegetables, not before supposed to be edible, as well as great improvements in modes of cookery, all conducing to human health and comfort. In London, according to Macaulay, the mortality in 1685, was one in twenty-three; now it is one in forty. This results from greater cleanliness, better lodgings, better food, and a greater variety of it, otherwise the great increase of the city would only increase the mortality. The multiplication of varieties of vegetable food, not only conduces to health, but it is a security against famine; for when one kind of crop fails, another may be abundant. A local failure, too, may be supplied from a distance of hundreds or thousands of miles, by means of ships, steam-boats, and rail-road cars.

Scarcely any plant is found growing in perfection in its natural state. The fair large apple of our temperate climates, came from the miserable, sour, little crab-apple. The cereal grains were doubtless very inferior, when they struggled with other grasses and useless weeds for existence, or were overshadowed by tangled forests. There may still

be some, as well as edible roots and fruits, which have not yet been discovered in any part of the world, but which might be improved and made of great value. America gave to the eastern hemisphere, maize, tobacco, the potatoe, the pine-apple, the turkey, and more lately the alpaca, together with innumerable flowering plants as well as other vegetables and animals of less economical importance, and has received in return, wheat, rye, oats, barley, turnips, beets, carrots, cotton, hemp, sugar-cane, coffee, the apple, pear, peach, and a great variety of other fruits, roots and herbs; the horse, the ox, the goat, the sheep, the ass, the swine, the honey bee, and last but not least, the white race of mankind, whose busy improving hand is seen on many parts of the western continent, and even in these remote islands. It is the laudable object of your society to make the work of that hand more effectual in developing the resources of these islands, by improving not only all the native plants, but all such as can profitably be made to thrive here from other parts of the earth. Of these plants and animals from every part of the globe, we may select those most useful to us, and we ought to discover every useful native plant in these islands, and give it to the world in exchange.

The British and American governments, aware of the importance of many new products to the agricultural interests of their countries, have given standing orders to their consuls throughout the world, to send home all the plants and seeds, that may, in the most distant degree, promise to benefit the landed interests; and similar orders have I believe been issued by other christian powers. Botanic gardens have been established either by government or by individual associations in nearly every country in Europe and in the United States. My own State, the most northerly in the American Union, has recently established a state agricultural school, and purchased a farm upon which the students are to operate. A part of their work will be to endeavor to acclimate, in the long, cold winters and short summers of Maine, plants and fruits from the lower temperate climates, and even from the tropics. This work of acclimation has already been successful with many plants. Experiments of this kind are constantly going on in botanical gardens and nurseries, throughout England, Scotland and Ireland. So successful have been these labors that plantations now exist in the vicinity of London. as well as Paris, whence are dissemi-

nated an infinite variety of valuable and ornamental trees and plants, collected from every soil and climate of the earth. Similar establishments exist in the United States, mostly however the result of individual enterprise, and generally, I am happy to believe, made profitable to the owners.

The French "Jardin des Plantes," of Paris is justly celebrated; the botanical garden at Montpelier, is scarcely inferior; and the horticultural enterprise and energy of the French is further developing itself in the establishment of an extensive botanic garden in Algiers. The Royal gardens of the French, as well as those of Russia, at St. Petersburg, and in the milder climate of the Crimea, are celebrated as seminaries of instruction in most of the branches of natural history, and have also been eminently beneficial to agricultural and mechanical labor. Whenever the means of our society may allow, I would suggest that a suitable piece of land be selected on one of these islands for a similar garden. It could be improved by degrees. Royal or individual munificence would, no doubt, supply all the needful funds and render it highly ornamental as well as useful. It would be a bond of union to the society, and serve to perpetuate its efforts, and its usefulness. Every variety of useful tropical plant should have a place in it, together with many from the temperate climates, north and south. Many of the deciduous trees of those climates, as the apple, the peach, and the pear, might perhaps, by planting the seeds from the verge of the tropics, be made to grow here perennially; if not near the sea-level, at least upon the mountains. If tropical trees and plants can be acclimated in the temperate climates, why may not the rule be reversed? With such a garden the society would be in good condition to make annual reports, which would be read with interest on all the continents and islands wherever civilization has reached, be treasured up in the archives, made subjects of discussion in agricultural, horticultural, and scientific societies throughout the world, and be the means of receiving their reports in return, with new seeds and plants from their gardens. Should there be among you some rich man who has more money than he needs, or who, unable to carry his wealth with him to the "narrow house" he must finally occupy, is at a loss to dispose of it to his satisfaction, perhaps he may think well enough of the Royal Botanic Garden of Hawaii, to inscribe his name among its

liberal patrons, and thereby render himself the benefactor of his race. Its verdant foliage, its shady walks, its plants of every variety, and flowers of every hue, blooming in perpetual verdure, irrigated if needful by the mountain stream, would be a monument that any man might covet, and transmit his name to posterity with the blessings of millions of the human family. The Royal Botanic Garden of Brazil, at Rio Janeiro, commands the admiration of a multitude of visitors who have seen it.

In the year 1838 Dr. Perrine made application to the government of the U. S. for a tract of land in Florida, and other assistance to enable him to introduce the culture of various tropical plants in that peninsula, and particularly the *Agave Sisalana*, from which the Sisal hemp is made. Of this hemp a cordage is manufactured similar to the Manila white rope. The agave grows abundantly in sandy, barren soils, in Mexico and Yucatan, and would no doubt grow in the sandy regions of Florida. Dr. Perrine's plan received favorable attention in various quarters, but his death put an end to his scheme, and I have not heard of its renewal. There are in these islands some regions of sandy soil, without trees, (such as the low lands between East and West Maui,) where the agave might grow, and possibly the date palm. The introduction of any kind of trees on such soils would have a favorable effect, and serve to condense the vapors of the atmosphere into rain where little or none now falls. Trees are of great use in modifying the climate of a country. They serve to equalize the temperature, check the violence of winds, prevent the streams from drying up, and they attract showers of rain ; besides, they are every where wanted for building, fencing, and fuel. I think public attention should be directed to the matter in these islands, where large districts are without trees, and fuel brings an enormous price. Every man who has no more than a single acre of land, should plant trees and raise his own fuel as well as his own kalo, bananas, pine-apples, grapes, figs, and sweet potatoes. Where the trade-winds blow strong, he might plant on the windward side rows of the hau, the pandanus, the tamarind, the ohia, the mango, the pride of India, the koa, or other wood, and in the shelter of these he might have his coffee, and fig trees, his bananas, and other fruit trees. As his barrier trees should grow larger and crowd each other, he might cut down each alternate one for fuel, or saw off superfluous

limbs to be used in the same way. In the neighborhood of Honolulu no trees are growing except those which have been planted. The lands formerly not being divided among individual owners with allodial titles, wood was taken, probably, wherever it could be found, and no care was given to its reproduction. The plains in the vicinity and the spurs of the mountains, were thus stripped of their trees and left bare. But we know that trees grow well here when planted, and serve greatly to modify the heat of a vertical sun. On the mountain sides their roots hold the earth in place, and prevent it from being washed away by the rains. The earth from the disintegrated rocks is thus retained and mingled with the vegetable mould from decayed roots and limbs, and fallen leaves, for they *do* fall here, though it cannot be said

> "Leaves have their time to fall,
> "And flowers to wither with the North wind's breath."

The old leaves are falling all the time, as new ones are forming, and the north wind brings no blighting frosts save to the highest mountain-tops.

The improvidence of stripping a country of its wood and preventing its renewal by annual burnings, as on the prairies in the upper valley the Mississippi and elsewhere, or of destroying it in any other way, has been very common in many countries. Possibly in some regions, trees never did obtain a foothold. Large districts in Scotland and Wales were, less than a century ago, clothed with nothing larger than dwarfish ferns or heather, but are now covered with thrifty trees. The old Duke of Athol planted a forest on his estate in Perthshire of 15,593 acres, which contained upwards of twenty-seven millions of young trees when he died, and his successor set out 6,500 acres of poor mountain land solely with larches, valuable for ship timber. The land was not worth over twenty-two cents rent per acre, and now with the timber on it, is valued at $32,500,000. This statement is taken from a letter of Gen. H. A. S. Dearborn in the published proceedings of the 19th Annual Fair of the American Institute.

Much building timber will be wanted here. The grass houses of the natives do not last long. Their repair is becoming expensive, since cattle have multiplied, so as to prevent the grass from growing long enough for thatch. If fields are fenced and grass grown for the

purpose of thatch, this will cost something, and considering its inferior durability, be about as expensive as shingles. In many places houses can be built of stone, but even with this material many articles used in building must be imported. Before the white man came here the native imported nothing, of course. But it is not so now. All his clothing is imported, as are all the tools he uses. He eats salmon from the Columbia river, and flour from Chili, Australia, and the United States. He rides on saddles from the coast, or drives a wagon or cart, made in Sydney, and if he can afford it, buys silks from China, and costly furniture from Europe or the States. His wants in all these particulars will be increasing and not diminishing. It is well to consider what he can export to pay for these things, so as to leave him a currency of gold and silver. The supply of vegetables and fruits to whale ships will not keep pace with these increasing wants. You must have something to export. No nation can thrive by importing all its bread, and all its manufactures, unless it has rich mines or some great staple of export. You have neither as yet, but may undoubtedly produce a large amount of sugar, molasses, and coffee, for exportation, and you may send a considerable amount of tropical fruits to California and Oregon. It probably will not be long before they will raise their own potatoes, though some may continue to go to their cities on the coast. The orange tree ought to be planted here more extensively, as well as the fig, the grape, and the olive. You have now all the most valuable domestic animals, but there are some not yet here, which might be useful or convenient, such as the alpaca and the deer, which would thrive upon the mountains; but sheep, which are more useful than either, and as well adapted to mountain ranges, are yet only in very limited numbers, though mutton brings a high price in Honolulu. The increase of a large breed, of coarse-wooled sheep, the best for mutton, such as the Leicester, the Dishley, the Cotswold, or the South Downs, would I think be very desirable. The Providence R. I. Journal states that a ram and an ewe have just been imported for the sheep farm H. B. Ives of Rhode Island. They are a present from H. B. M. Consul in Zanzibar, having been brought from the mountains 300 miles interior from the east coast of Africa. They have coarse wool, no horns, and large dewlaps, like cattle, with tails of enormous size and fatness. The mutton is said to be unrivalled in flavor and tenderness. Whale

ships touching at Zanzibar might bring us some of these sheep. Some sheep from the cape of Good Hope have already been introduced here. Sheep increase the fertility of the land on which they pasture, and increase its value for tillage, if it is susceptible of being ploughed, as it should be occasionally to destroy noxious weeds, which I find are very numerous in this vicinity, particularly the indigo plant, which was introduced about twenty years ago, and has come to be as great a nuisance here, as Canada thistles are in the northern United States. It would seem that a plant which grows so thriftily, and which no animal will eat, ought to be used as intended when it was brought here. Perhaps some enterprising man may yet succeed in manufacturing it with profit. It was formerly cultivated extensively in Venezuela and elsewhere on the Spanish main, but the most of it now comes from Hindostan, where labor is cheaper than almost anywhere else in the world. A large quantity is used in Europe and the United States. There are substitutes for a blue dye, but none equal to indigo. In the progress of invention some process may be discovered which may greatly reduce the labor required in the manufacture, so that the indigo now overrunning your pasture lands may be turned to good account. If it should be fifty years hence I apprehend you will not find the plant exterminated. The process by which it is now manufactured may be seen in Ure's Dictionary of Arts, Manufactures and Mines. As to indigo and other plants upon which animals will not feed, it is believed a skilful and persevering use of the plough, the hoe, and the harrow, will be rquisite for their extermination. And the plongh will be especially needed to preserve and increase the fertility of the soil, as well as to destroy useless plants. It is certainly bad economy to scrape over the top of the ground with the oo or digger, or its substitute the whale spade, and pile up the weeds and burn them, while nothing is ever put upon the earth in the shape of manure. On the contrary, as much as possible of vegetable growth, and all bones and animal remains, should be turned into the earth with the plough, there to ferment and fill the earth with salts, gasses and vegetable mould, rendering it light, friable and fertile, and more capable of withstanding drought.

Few animals being kept here in stables, the amount of manure from that source must be very limited, and yet without manuring in some

way, the fertility of the land will be exhausted. No excrementary matter or animal remains should ever be wasted, but all be scattered and covered in the earth. All putrid bodies, bones, &c., should be carefully covered to fill the soil with their fertilizing elements instead of remaining upon its surface to poison the atmosphere we breathe.

Dr. Daniel Lee, a collaborator for the agricultural department of the American Patent Office, in a letter in the prefatory part of the report of the Commissioners of Patents for 1849, says: "There has been enough of the elements of bread and meat, wool and cotton, drawn from the surface of the earth and sent to London, and buried in the ground or washed into the Thames, to feed and clothe the entire population of the world for a century, under a wise system of agriculture and horticulture. Down to this day great cities have ever been the worst desolators of the earth." Dr. Lee might have added that there is still more wasted in country villages, and even farm residences, washed into streams not used for irrigation, and swept off to the ocean in rivers. In the same report an estimate is made in the chapter on agricultural statistics, to prove that in the United States there is annually wasted "enough of the elements of bread, without which not the first kernel of corn can be formed, to produce one thousand millions of bushels of this important article." And this too while tillage land is every year becoming less and less productive, from the exhaustion of its elements of fertility.

Where enclosures are too limited to be ploughed, the round pointed shovel, which is better than the spade, should be used in digging up the earth and the light hoe in weeding merely. It may require some perseverance to bring these tools into use, but once understood they will be afterwards appreciated. If the bare foot cannot be well applied to the top of the shovel blade, a thick soled shoe or wooden sandal can be used. When wheel barrows were first introduced into Jamaica, the negroes, after loading them, persisted for some time in carrying the load, wheel barrow and all, upon the top of their heads, for so they had been accustomed to carry all their burdens; yet the wheel barrows won the victory in the end, and so will the hoes and the shovels. There is nothing like persevering against error and obstinate prejudice. Newton's theory of gravitation was not adopted even by the academicians of France, until forty years after the publication of his

Principia, and Galileo was obliged to confess before the assembled authorities of the Romish church, that the earth did not turn round on its axis. Still he did not despair, but as he arose from his humble position and brushed the dust from his knees, he whispered to a friend, "nevertheless the Earth does revolve," and his belief has become universal, though the pontifical decree denouncing it as a heresy remains unrepealed. We ought to avail ourselves of all labor saving improvements extant, and find out others as fast as we can.

As an important auxiliary to the proper tillage of the land it is believed that an importation of birds would be very useful. Indian corn and some other crops, I am assured, are much injured by worms destroying the young plants. Such enemies of the husbandman are not peculiar to these islands. The last Patent Office Report, to which I have already alluded, estimates the annual loss in the United States, from the Hessian and other wheat flies, curculios, weavels, and boll worms, at twenty millions of dollars. Most kinds of small birds feed principally on insects. The favorite food of the robin is the cut worm which destroys young corn, cabbage plants, beans, &c. If the robin could be brought here alive and made to increase, he would be a most welcome visitor about our dwellings, and would be of great service in fields and garden. At present hens, ducks, and turkeys may do something in the fields, though they may be mischievous in gardens. They are profitable stock, however, and can be multiplied indefinitely, with great advantage to the consumer. They will live upon the insects they pick up, and require a large proportion of animal food, but to thrive and fatten or lay many eggs, they should be fed daily with some of the cereal grains. Of these only a few are cultivated in the islands, but more of them might be. Indian corn does well in Cuba, nearly the same latitude, and our friend Gower assures me he has raised good wheat on Maui. The high lands will no doubt produce wheat, corn, barley, oats, &c. Grist Mills are wanted, but these will be forthcoming. Where there is no water power, wind-mills can be constructed, as they have been elsewhere for many centuries. The trade-winds could be made to move powerful machinery.

The modes of cultivation which prevail in higher latitudes may not be strictly applicable here. In the regions of winter frost the earth has a season of rest, when all vegetation is suspended, and the earth

is loosened and upheaved by the freezing and consequent expansion of the water which saturates it. Here within the tropics it undergoes no such process, has no such rest, and has no winter's supply of barn-yard manure to be ploughed in when it is wanted. The plough is however, not the less needful to turn under the green sward, together with corn stalks, cane tops, and every kind of straw which can be strewed lengthwise in the furrow. Fortunately the Polynesian islands have one great advantage. In the higher latitudes there is much swampy, wet land not reclaimed by draining. The rains wash the hills and higher grounds, and carry their best soil into the low marshes where little grows but rushes, flags, and coarse grass. Nothing is lost here in that way. Such low grounds are the very best for the taro, which yielding a vast amount of nutritious food for the subsistence of man, requires all the fertilizing matter which can be drained into the slimy beds of soft mud in which it grows best. More might be added by artificial means with advantage, for taro beds, like all other cultivated lands, become exhausted by continual cultivation, if no vegetable or other manures be applied to them. An acre of taro will undoubtedly subsist a greater number of persons than any other crop known, and of course requires a large supply of the elements of fertility. It grows best in the mud, but it can also be accustomed to the high and dry land, and there becomes a somewhat different plant. I see no reason why it might not grow any where within the tropics, on the continent, and in the West Indies, or in the eastern hemisphere, and possibly might be acclimated in Louisiana, Texas, Georgia, Alabama and Florida. The water in which it grows would keep off light frosts in Florida, the lower Mississippi and Texas, as well as on the Sacramento and other rivers of California. It is not a bad substitute for bread, but an occasional corn cake, made of good sweet fresh Indian meal, would be an agreeable change and promote health. If every native owner of land would cultivate an acre of corn, he would keep his pigs and poultry in better condition, give greater variety to his own food, and perhaps so lessen the bills of mortality as to prevent the decrease of his race ; nay soon bring about an actual increase. More regard to the laws of health is indispensable to this end. The mountainous parts of the islands are admirably adapted to the range of the goat, and the milk and flesh of this animal I am aware are much

used by the native population, but the sheep will thrive in even higher altitudes, and his flesh is much superior. He should be shorn, however, once or twice a year. More fat sheep, and fewer lean, scurvy, worthless dogs, would be a decided gain. The food which is thrown to dogs could be more profitably given to turkeys, hens, pigs, ducks, and geese. Wool might sell rather low perhaps, but would be worth saving; and I do not see why it might not be manufactured into blankets, flannels, and cheap cloths here in the islands. The machinery for such woollen mills as the manufacturer would require would not be expensive, nor the labor great. If every native would wear a woollen shirt, and sleep at night under a woollen blanket, I think there would be less of asthma, and other affections of the lungs, induced as these diseases probably are by exposure to the strong winds while the pores of the skin are opened by profuse perspiration. Flannel prevents the too sudden cooling of the body. No clothing made of vegetable texture can ever be equal to that which the God of nature provides to retain animal heat. The fowls of the air and the beasts of the field are all covered with a permanent coat, but the "featherless biped," MAN, is left to clothe himself by his own ingenuity, He can vary his covering with the changes of the weather, taking from the sheep, the Cashmere goat, and the Alpacca the excessive quantity with which nature has provided those animals and fashioning them into shapes for his own convenience.

The culture of silk, which at one time promised great success, seems to have been abandoned, yet the mulberry continues to grow as well as the indigo, and future attempts to manage the silk worm may be more successful. We may look forward to the time when these islands will have a population ten times greater than at present. It will be a mixture of all races, Hawaiian, Anglo-Saxon and Saxon without the Anglo, the Norman and the Celt, the descendant of Goth and Hun, the Chinese, the Japanese, the African and East Indian. The valleys will be cultivated like gardens, and the terraced mountain sides be covered with vineyards, like those of Madeira, Vesuvius and Etna. One of the most populous places in the world, of its size, is the island of Malta, which history informs us was a barren rock, but where the knights of early chivalry made fertile gardens by pounding up the loose and scattered stones which covered its bleak surface and import-

ing soil from Sicily to mix with their dust. The most populous and fertile portions of the Netherlands have been reclaimed from the sea by dykes. The government of Holland is now engaged in pumping out the Zuyder Zee, with wind-mills and steam engines, to a depth of thirteen feet below the sea level for the purpose of securing Amsterdam, Leyden and a large region of farms and villages from inundation, and converting the bottom of the lake into tillage land.

On the other hand, large districts of country once swarming with population, are now comparatively desolate. Depending upon irrigation for their fertility, their canals, aqueducts and hydraulic machinery, under bad government and the ravages of war, have gone to ruins, and arid deserts have taken the place of fruitful fields. The city of Babylon, watered by the Euphrates, is supposed by D'Anville to have had a population larger than Paris, and covered an area greater than London. Herodotus speaks of Babylonia as the most fruitful of all the countries he had seen. It is now little better than a desert. Nineveh it is supposed was on the Tigris, as is also Bagdad. Damascus, still surviving in diminished proportions, is watered by a stream from the mountains of Anti-Lebanon. Heliopolis or Baalbec, and Palmyra or Tadmor, now deserted, were no doubt the centres of irrigated countries, in the plains of Syria. These were great cities in their time. They might be so now if these canals and aqueducts had been kept in order and a skilful system of agriculture had been practised. It is not alone the moisture of the water which makes irrigation so useful. If economically managed, the waste from the sinks and sewers of cities and villages may be carried into the irrigating canals and be absorbed by cultivated lands, instead of being washed off into the sea. Farm-houses, stables, barns and cattle pens should be so constructed, if possible, that all their drainage may be carried upon gardens, taro patches, or grass land. A striking instance of this may be seen below the city of Edinburg, in Scotland, where a small stream coming through the city is spread over several hundred acres of meadow land, producing a most astonishing degree of fertility.

Many roads are to be made on the islands, and some of them will be expensive, but all together will amount to nothing like the labor which was expended by the Incas of Peru upon one great road from Quito to Cuzco, along the spurs of the Andes, the remains of which were seen by Humboldt and are vividly described by Prescott.

Among the resources of the islands we should suppose the manufacture of salt might be enumerated. Great quantities are made in the Bahamas and other islands of the Atlantic, by solar evaporation of sea water. On the leeward side of the Hawaiian islands the evaporation must be as great, and the rains very little. The Pacific coast will require a large supply ere long. It is true that Mexico and California have numerous salt ponds, much stronger than sea water, but they are far interior. The water of the great salt lake in the great basin of Utah, is as strong as that of the Dead Sea—perhaps stronger than the Caspian—there are numerous other salt lakes in the Great Basin. All such lakes, every where, which have no outlets, are salt, and none are salt which have streams running out of them. Tezcuco is the lowest of several in the great valley of Mexico, and is of course salt; but all along the coast salt can be obtained easier and cheaper by sea, and can be made as well here as any where. Indeed, Nature by means of her volcanic fires has made one complete basin for solar evaporation of the sea water, near Eva, where the sea-water, slowly admitted by a subterranean channel, is for the most of the year constantly evaporating under a hot sun. This is the place to which Capt. Wilkes went with his boats and deep sea sounding lines to find the bottom reported to be unfathomable, but where he could find but 18 inches of water. There is however a deep place which he did not find.

A species of flax, which grows in New Zealand (Phormum tenax) has been recommended by Mr. Poinsett in De Bow's Commercial Review, as a product which may be useful in the Southern States. Probably it would grow well in these islands. As described by M'Culloch he says it excels every other species in strength of fibre and whiteness. It is mentioned in Capt. Cook's voyage in 1775 and in Wilkes' Narrative of the Exploring expedition. According to experiments of La Belladierre, Mr. Poinsett says the fibre of this plant is much stronger than any vegetable we know of; that of the Agave Americana breaks under a weight of seven; that of flax at eleven and three fourths; that of hemp at sixteen and three fourths; that of the New Zealand flax at twenty-three and seven elevenths; so that it is only exceeded by silk which reaches to twenty four. The New Zealand flax grows on dry or wet land, but best on the wet land.

The capacity of the islands to produce sugar, coffee and tobacco, has been placed beyond doubt, and it is upon these, and especially sugar, that reliance must be had for extensive exports to pay for the constantly increasing imports. I have said nothing of the modes of culture or the manufacture of these articles, because there are other members of this society who understand the matter far better than I do. Besides I have no love for tobacco.

Cotton grows well here, but perhaps you can do better than to raise cotton to be sent round Cape Horn to be manufactured, and there to enter into competition with that of the United States, Brazil, Egypt and the East Indies. California and Oregon will have cotton and woollen manufactories, but it will be some time hence.

Rice will grow here, no doubt, but at present it comes cheap from China and the Phillipine islands ; and we must add that sugar comes from there also and competes with that which is made here.

The mode of irrigation of rice in China, is thus described in Fortune's China, a work which contains many interesting particulars relating to Chinese agriculture.

"IRRIGATION IN CHINA.—Rice is grown on the lower terrace ground, and a stream of water is always led from some ravine and made to flow across the sides of the hills until it reaches the highest terrace, into which it flows and floods the whole level space. When the water rises three or four inches in height, which is sufficiently high for the rice, it finds vent at an opening made for the purpose in the bank, through which it flows into the terrace below, which it floods in the same manner, and so on to the lowest. In this way the whole of the rice terraces are kept flooded continually until the stalks of the crops assume a yellow ripening hue, when the water being no longer required is turned back into its natural channel, or led to a different part of the hill for the nourishment of other crops. These mountain streams, which abound in all parts of the hilly districts, are of the greatest importance to the farmer, and as they generally spring from a high elevation in the ravines, they can be conducted at pleasure over all the lower parts of the hills."

So it will be seen the cultivation of rice is not confined as in South Carolina and Georgia to low, flat lands flooded by a river, or as on the Ganges and other rivers of lower India, but the hill

sides are made equally available. Nor is this mode of irrigation, which is here applied only to kalo and bananas, in China applied only to paddy (rice) fields and other aquatic plants, but the soil for other crops is moistened by the same process.

The art of irrigation is an important one in these islands, for though there is generally rain enough on the tops of the mountains and on the sides swept by the trade winds, there is very little on the leeward sides in summer, and in some localities very little at any time. These cannot be made productive without irrigation by the mountain streams. The native population seem to understand the art of conducting water into their kalo patches, but it is desirable also to spread it over fields, and it may be necessary to bring it down from greater distances. In Northern Europe irrigation is not yet practised to any great extent, and still less in the Atlantic States of America. The cultivation in California and New Mexico depends much on the streams from the mountains. But the most successful and extensive system of irrigation in the world perhaps is in Egypt, for thousands of years held to be the granary of the world ; yet cultivated Egypt is but a ribbon of land running some hundreds of miles across the Lybian desert, where very little rain ever falls. There is no cultivation beyond the reach of the waters of the Nile. All the soil is the deposit of the Nile, brought down by the annual floods from the mountainous regions of the interior of Africa. Like the Mississippi, the banks of the Nile are higher than the land on each side, made so by the sedimentary deposit. When the winter floods fill the channel of the river the water is carried back into the country by thousands of little canals by which the ground is thoroughly saturated as far as the waters reach, and an annual deposit of mud enriches the land at the same time. When the water falls in the river far below its highest level, it is pumped up by water-wheels, wind-mills and other artificial processes, and thus carried upon the land to a limited extent. With a surface one third less than the state of Virginia, the kingdom of Egypt, in the time of Sesostris, contained a population of twenty-five millions and was the first and wealthiest kingdom of the earth. Since then many of the water-works have gone to ruin and the drifting sands of the desert have reduced the cultivated lands nearly one half in extent.

The country being level, the nature of the land thus irrigated in

Egypt is so different from these mountainous islands, that we perhaps can learn but little from the Egyptians as to the best means of irrigating the valleys and mountain sides of Hawaii. On the contrary we must look rather to modern inventions and discoveries in the science of hydraulics. When the land becomes divided into small tracts, with multiplied ownerships, many lots will be without water, and the porous volcanic soil, with no strata of saturated clay to hold it, will afford no wells. To such places the mountain stream must be carried in canals or aqueducts, or lifted in small jets by the hydraulic ram, invented by Whitehurst and Montgolfier; or recourse must be had to cisterns to catch the rain water, with apparatus for filtering it. It may thus be obtained very pure for family uses and for cattle.

Land which is irrigated by streams of water will not be so quickly exhausted as that which is not, because water brings with it a large quantity of fertilizing matter. Green plants contain 75 per cent. or more of water, and this is formed of oxygen and hydrogen, which are also the bases of vegetable matter. Water also may contain sulphur, lime and other salts, the greater part of which are absorbed and decomposed by plants. Water also deposits lime which fertilizes. It carries off a large quantity likewise of other fertilizing particles, unless they are arrested by the hand of culture and turned to use. A great amount of earth is thus carried off by rivers and deposited at their mouths or along their courses. According to Rennel, the Ganges every hour deposits at its mouth 2,509,056,000 cubic feet of earth, the Nile 14,784,000, and the Mississippi 800,000. This is the origin of the rich deltas at the mouth of rivers whose waters are turbid; but in this way much fertile soil must be buried deep and lost to human use. I may say, however, I do not rely on the accuracy of the calculations of Rennel, as I find them stated, not believing either the Ganges or the Nile deposit so much more than the Mississippi. Perhaps there is some typographical mistake.

All the soil upon the Hawaiian Islands has been made from the abrasion of the hills by the united actions of the rains and the atmosphere, since they were thrown up by volçanic eruption. The rocks are constantly undergoing the process of disintegration, and hence the mountain streams are constantly bringing down fertilizing matter to the

valleys below. If there be any lime in these rocks, the water from them will supply a very important element of vegetation.

Carbonate of lime, as stated by Thaer, easily mixes with pure water, but does not dissolve in it, and if the fluid is left quiet the carbonate soon subsides. But it may also be *dissolved* in water which is saturated with carbonic acid. Water from most springs which issue from calcareous mountains is of this kind. The lime is deposited when it comes in contact with the atmosphere when held in solution; or if merely floating it subsides in the first still water, like other particles of dust. That the portion of saline matters contained in spring water is diminished by being used for purposes of irrigation has been proved by the experiments of Dr. H. Madden, who found that a gallon of water "clear as crystal," issuing from the base of the Pentland Hills, contained, before passing over a meadow, ten grains of common salt, and four grains of carbonate of lime, (chalk), but after passing over the meadow a gallon of the same water contained only five grains of common salt, and two of carbonate of lime. Hence it will be seen that water from the hills may be more fructifying than rains direct from the clouds, if the former passes over rocks or through soils containing fertilizing elements. The water which has passed through a dozen rice fields or kalo patches lying below each other in successive embanked terraces, must however contain not a little of vegetable and some animal putrefaction, and perhaps be more fertilizing to most plants than pure spring water. It contains the *humus* which is indispensable to all vegetation, while at the same time it is less wholesome to drink. "Humus or vegetable mould," says Thaer in his Principles of Agriculture, "is the product of living matter and the source of it. It affords food to organization; without it nothing material could have life; at least the more perfect animals and plants could not exist; and therefore death and destruction are necessary and accessary to the re-production of animal and vegetable life. The greater the number of living creatures, the more humus is produced and consequently the supply of the elements for the nutrition of life is increased. It is however apparently lost by being carried into the ocean by rivers, and into the atmosphere by the agency of oxygen which unites with and converts it into gaseous matter." "We have," says he, "only to observe the progress of vegetation upon naked rocks

in order to understand the history of humus from the beginning of the world. At first only lichens and mosses are found there, from the decomposition of which more perfect plants derive their nourishment. These in their turn die and augment the mass of mould by their putrefaction, and thus a bed of humus is formed capable of affording nourishment to the largest trees."

The olive tree grows to a great age, and is long in coming to maturity as heretofore cultivated, but I see in a letter from L. W. Tinelli, the U. S. Consul at Oporto, that a new variety has been introduced into the South of France, and in Spain and Portugal, which yields abundantly the second year after planting. It is rather a bush or shrub than a tree, growing only about four feet high. Probably it would grow well here, and may be worth introducing. It would be less affected by the winds than a high tree, and be a fine embellishment in a garden.

I think it very desirable that not only more wheat and corn should be cultivated on the islands, but more beans and other grain. I know not how oats thrive, but I find in the U. S. Patent Office Report of 1848 some remarks on barley which may be worth noticing here. When Lieut. Lynch, of the U. S. Navy, was in Palestine exploring the Dead Sea he procured three kinds of wheat from Syria and two kinds of barley, one of these from Engaddi. The hill country of Judea and the mountains of Lebanon, Sinai, and Hermon, have some resemblance in soil and climate to these islands, but not being fanned by trade-winds and being bounded on the south and east by arid deserts, the heat of summer greatly exceeds the heat here ; yet wheat and barley are common there, and were so when the children of Israel, escaping from bondage in Egypt, crossed an arm of the Red Sea and passed round through the deserts of Moab to the more fruitful valley of the Jordan, whose inhabitants they subdued and drove away or exterminated. Barley is often referred to in the Jewish scriptures. It was evidently more common than wheat three thousand years ago, and is so still among the Arabs, and other inhabitants of Northern Africa, Arabia and Syria. A variety of black skinned barley has been received at Washington from England, and distributed from the Patent Office. It has been acclimated in Europe and is reckoned a valuable grain, but is said to have been brought from Abysinia.

It is described as making an excellent flour and being very productive.

Barley is recommended in a South Carolina paper, as an excellent crop for the South. The writer says it is the only grain in the South which will mature a crop from the winter's moisture of the earth, and being originally cultivated in the hot climates of Arabia, Persia and Egypt, is admirably adapted to the climate of South Carolina. By high cultivation it has been made to produce 72 bushels to the acre. The writer pronounces it a better food for horses, mules, cattle and hogs, as well as furnishing the best of food for poultry : if ground into coarse meal, such as is commonly called "chops," and mixed with cut straw or fodder, it is unrivalled for working cattle and horses. We apprehend the grinding is more necessary for the cattle than the poultry, for the gizzard of a bird is a powerful grinder, having been found by experiments of Spallanzani, to dissolve or grind up iron, lead and glass in a short time. In this connection it may be well to say that if fowls lay many eggs they must have access to lime in some form, for the shell is composed principally of lime.

Speaking on this subject, Professor Gregory of Aberdeen says :— As I suppose you keep poultry, I may tell you that it has been ascertained that if you mix with their food a sufficient quantity of egg-shells or chalk, which they eat greedily, they will lay, other things being equal, twice or thrice as much as before. A well fed fowl is disposed to lay a vast number of eggs, but cannot do so without the materials for the shells, however nourishing in other respects the food may be: indeed a fowl fed on food and water free from carbonate of lime, or not finding any in the soil, or in the shape of mortar, which they often eat off the walls, would lay no eggs at all with the best will in the world.

In Skinner's Monthly Journal of Agriculture, published in New York, in an essay on Poultry, it is said—"The ordinary productiveness of the hen is truly astonishing, as it actually lays in the course of a year 200 eggs, provided it go at liberty, is well fed, and has a plentiful supply of water. Many instances have been known of hens laying 300 in a year." At 50 cents a dozen, the price in Honolulu, the produce of twenty five hens at 200 eggs each, would be over $220 a year, or nearly $9 per hen per annum. If they would lay half as many, they would pay well for a little meal or grain. Of course they get

lime enough where there is coral or sea shells. If the hens kept by the native population do not lay so much as in Europe and the United States, I suspect it is because they are not properly fed. If any one present should deem this a subject not grave enough for an agricultural address, let him go without eggs for his breakfast or get very small ones at a great price. It is a wonderful provision of nature that the domesticated fowl should be made to lay a number vastly greater than she can hatch, thus converting all manner of insects and creeping things, centipedes included, and many seeds and vegetable matter which would otherwise be wasted or produce noxious weeds, into the most condensed, nutritious and palatable food for man. Such a living laboratory is not lightly to be regarded.

The number of eggs consumed in all the cities of the United States and in Europe is very great. I have not thought it necessary to gather statistics to prove this, but may mention the fact that in one day, as stated in a Cincinnati (Ohio,) paper, there was shipped from that city 500 barrels containing forty seven thousand dozen of eggs. The census of the United States for 1850 has not been printed, but it is said its statistics estimate the value of poultry at twenty millions of dollars, of which the state of New York has two millions. Besides the great amount of eggs produced in England, a great number are brought to London from France. Bixio's Journal of Practical Agriculture and Gardening, (French), contains a statement of the poultry and eggs of France, in which, alluding to actual statistics, he says, "We have found 190,000 fowls for 85,685 inhabitants, and these give annually a product of 14,400,000 eggs, or 166 eggs to a person a year." The population of France by the last census having been 34,230,178 inhabitants, he reckons the value of the eggs, at four francs per hundred, and one hundred and twenty eggs to a fowl, at over forty six millions of dollars. At the prices we pay they would come to nearly three hundred and forty millions of dollars. They ought to be as plenty and as cheap here as in France. If they were so, or half as cheap, the whale ships and other ships which touch here would take eggs and poultry to a large amount.

The American Patent Office Report for 1847 says :—"In France it is stated that 7,250,000,000 eggs are annually used, of which Paris consumes about 120 millions. The importation of eggs by England

from France in 1838 amounted to one hundred millions. It is stated that a bushel of Indian corn will last twice as long for hens as a bushel of buckwheat, but that the buckwheat is better to make them lay than any other grain. Barley is said to be better for them than oats, but perhaps those differences are mostly imaginary. Rice is believed by many to tend to blindness in fowls and to kill them. Perhaps it may where they are shut up, fed profusely, and have little or no animal food. The unboiled rice too may swell and over-distend their crops. Fowls like bears, swine and men, are omnivorous. They like a variety of food, animal and vegetable, especially where they are expected to lay eggs every day.

I should like to add something on the subject of fences, if I knew what to say for your advantage. Where there are loose boulders of stone scattered over the soil there can be no doubt they can be best disposed of in fences and walls of buildings, bridges, and terraces of hill sides for purposes of irrigation. Where the stones are not abundant the wall need not be very high if the night-flowering cactus be planted beside it. The plant will climb on the wall and render it impassable to all animals, I should suppose, while it will render the fence highly ornamental, especially on moonlight evenings, when the magnificent flower opens its snowy petals to the Queen of Night, to close again for ever with the next morning sun. On the premises I occupy in the valley of Nuuanu I have seen more than sixty of these gigantic and fragrant flowers blooming at once. Each flower blooms for only one night, but the plant itself is any thing but fragile, and I believe lives to a great age. New flowers open almost every night in the summer months. The plant is easily propagated by cuttings, and like all varieties of the cactus will grow in an arid soil. In like manner it would cover a low adobie wall, or a bank of earth with a ditch each side of it. Hedges may be made without stone, bank, or ditch, in some places of the common cactus or other material, but I expect that iron wire will after a while become the cheapest kind of fence. I see that it has already been introduced in California and made close enough to keep out a rabbit. Some kind of wood, like cedar or locust, which will last a long time set in the ground for posts, should be planted and growing if there are none such already on the islands. The wire will not rust if kept painted and it will take but little paint to do this. A

wire fence offers little obstruction to the wind, and is therefore not liable to be blown down. As a fence against cattle and horses, only two or three stout horizontal wires are necessary ; more for smaller animals ; but these may all be lighter wire below the topmost. It seems almost superfluous to add that every dwelling, every cottage, should be embowered among trees, and these might, for the most part, as well be fruit trees as any other. The tamarind grows large and strong ; the alligator pear is a stately tree and yields an excellent fruit ; the chirimoya is growing on some of these islands ; and the mango may be seen in this town ; the fig and banana require some shelter from other trees ; but gentlemen, you know more of the trees of the islands than I do, and I trust each of you, individually, will give the society and the farmers of the islands the benefit of your observations. The object of the society is to collect and diffuse information in every thing that relates to agriculture. For this purpose you have already made the commencement of a library, which I trust may have a regular and not a slow growth. Notwithstanding the stationary condition of things in China, I have no doubt much may be learned of the Chinese in agriculture, and some valuable trees and plants may yet be obtained from them. Our intercourse with them is constantly increasing, as it is with all parts of Polynesia and the East Indies. We ought to have here every kind of tree or plant that is of any value, and may expect to have them in the course of time. But this society may greatly speed the time and accelerate the progress of agriculture, gardening and flower-adornment. Let us hope there may be no abatement in its efforts to that end. Superior cultivation, skill and taste in horticulture, well pruned trees, neat and smooth walks, among verdant shrubbery and brilliant flowers, serve to make one contented and happy in his dwelling, though it be only a grass house or thatched cottage, and they imply a degree of mental refinement, as they also have a refining, an elevating and a felicitous influence on all around them. With a climate unsurpassed for healthfulness, perpetually fanned by the breezes of the vast Pacific, it is here if any where that the "islands of the blessed," sung of by the Arabian poets, may be located ; here, where the far west approaches the verge of the extreme east, it is that we must look for the realization of the fabled gardens of the Hesperides. It is here in the midst of a vast sea, unknown to Greek or Roman, we

may make the language of the Mantuan bard applicable, though written nearly nineteen hundred years ago :—

"The golden corn each laughing valley fills,
"The vintage reddens on a thousand hills;
"Luxuriant olives spread from shore to shore,
"And flocks unnumbered range the pastures o'er.
"Here ceaseless spring, here winter wreathed with flowers,
"And flocks twice teem and fruits twice bend the bowers;
"Yet here no lion breeds, no tiger strays,
"No poisonous aconite the touch betrays,
"No monstrous snake th' uncoiling volume trails,
"Or gathers orb on orb his iron scales,
"But many a peopled city towers around,
"And many a rocky cliff with castle crowned."

For the Roman castle let us here substitute the Christian temple, and for the proud and warlike Pagan, a people imbued with a goodly portion of the spirit of the Great Teacher who, more than eighteen centuries ago, proclaimed peace on earth—good will to the whole family of man. Then may it be literally and truly said that every dweller in the land may "repose under his own vine and fig tree, with no one to molest or make him afraid."

NOTE.—The statement of the population of England, Wales, Scotland and Ireland in 1700, 1801 and 1851, on page 22, was taken from the London Economist. The last column was by estimation on the ratio of increase on each preceding ten years and partial census returns. More full returns received here since the address was prepared, show in Ireland an absolute decrease of more than a million and a half in the last ten years, the results of famine from the repeated loss of the potato crop the great amount of emigration and other causes.

FIRST ANNUAL REPORT

OF THE TREASURER OF THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

Honolulu, August 11, 1851.

To the Hon. Wm. L. Lee,

President of the R. H. A. S.

SIR,—I have the honor to represent to you that since the formation of this society up to the present time, the receipts and disbursements have been as follows, viz :—

RECEIPTS.

Cash for 117 Certificates of Annual Membership,	$585 00
" " 18 " " Life Membership,	650 00
Amount of Bill for printing and binding 750 copies of the first number of the Society's Transactions, assumed by the Hawaiian Government.	209 75
	$1444 75

DISBURSEMENTS.

Paid Bill for Letter-press and Stationery,	$ 43 00	
" " for printing Circulars - - -	4 00	
" to E. P. Bond, Esq., to be sent to Great Britain, the United States, and China, and invested in Publications, Books, and Silver Cups for Premiums.	395 00	
Invested in Bond and Mortgage on acc't. of the Society. - - - - -	500 00	
Paid for collecting—and loss on money	1 38	
Amount of Polynesian office's Bill for Printing and Binding, as above - -	209 75	
Balance Cash on hand - - - - -	291 62	
	$1444 75	

Mr. S. N. Castle, the former treasurer, resigned his office on the 31st May last, on account of his intended visit to the United States and delivered up the books, papers and cash in his hands, and rendered an account current with the society, which is hereto annexed.

I had the honor to be appointed Treasurer, by the Board of Managers, on the 30th June last, and received the balance of cash ($291,62) named above, which is now in my possession.

Respectfully submitted,

by your obd't servant,

CHAS R. BISHOP,

Treasurer.

Dr. **Royal Hawaiian Agricultural Society,**

In acc't current with S. N. Castle, Treas. Cr.

1850.		Dr.	Cr.
Aug. 16.	To cash p'd for book of records allowed to R. H. Bowlin	$ 2 00	
	do. to S. N. Castle acc't book	1 75	
26.	Paid for binding three books for the corresponding secretary, and book of receipts for treasurer.	1 50	
	" Mr. Whitney for blank receipt book	3 00	
29.	" J. F. B. Marshall for bill paid by him for printing circulars calling convention.	4 00	
31.	Paid for press and paper for corresponding secretary.	34 00	
Sept. 4	Paid to E. P. Bond pr receipt to invest in publications in Great Britain and the United States by resolution of board of managers of Aug. 28, 1850.	120 00	
15	Paid for book of record for the sec'ry of the board of managers.	75	
25	Invested for the benefit of the society on bond and mortgage by order of managers.	500 00	
Nov. 14	Paid for draft on H. Hill, Esq., favor of G. Wm. Bond, to be invested in books and premiums in the U. S. per order of the board of Managers.	150 00	
16	Allowed to the corresponding secretary in Mexican dollars to be remitted to China by Capt. Hubertson to be invested in premiums by order board of managers	125 00	
22	Paid for collect'g and losses	1 38	
1851.		$943 38	
May 31.	Balance to new acc't	291 62	
		$1235 00	
1851.			
May 31.	By cash received for 117 certificates of annual membership at $5,		$585 00
	By cash received for 13 certificates of life membership at $50		650 00
			$1235 00
May 31.	By balance on hand brought down		$291 62

The above account is respectfully submitted to the Royal Hawaiian Agricultural Society by

SAM'L N. CASTLE, Treasurer.

To the Hon. Wm. L. Lee,

President of the R. H. A. S.

Sir,—As it is not improbable that I may be called to visit the U. S.

at an early period and in the multiplied cares which devolve upon me may forget my duties as treasurer, I take the liberty to forward to your care all the books papers and money belonging to that department together with the above statement of accounts.

I take this opportunity through you to express the deep interest I feel in the prosperity of the agricultural interests of these islands and my constant wish for the success of this department.

Very respectfully, yours,
SAM'L N. CASTLE.

Dr. Royal Hawaiian Agricultural Society
In acc't with Chas. R. Bishop, Treasurer. Cr.

1851.			
Aug. 8,	To amount of Polynesian Office's Bill for printing and binding 750 copies of the first number of the Society's Transactions.	$209 75	
" 11,	Balance cash on hand carried down to new account.	291 62	
		$501 37	
Aug. 8	By cash from S. N. Castle, late treasurer		$291 62
" 11	" paid by the Hawaiian Gov't to the Polynesian office for printing and binding 750 copies of the Society's Transactions.		209 75
			$501 37
Aug. 11	By balance on hand brought down		$291 62

Hilo, Hawaii, 1st., August, 1851.

STEPHEN REYNOLDS, Esq.,
Vice President of the R. H. A. S., Honolulu.

SIR.—In conformity with instructions contained in the tenth resolution of the R. H. A. Society I beg to forward you the annexed statistical report relating to the domestic produce of our district in which I have not confined myself to the letter of the instructions.

As chairman of this committee I would remark that I have not heard from any of the corresponding members and draw the inference that as the vote followed the resolution you will receive their reports direct,

and I trust that from some of the more flourishing districts you may obtain fuller and more satisfactory reports, as these which I present are mostly obtained from the proprietors of the several plantations around. I am sir, your very obedient servant.

B. PITMAN.

TOTAL AMOUNT OF HAWAIIAN PRODUCE EXPORTED FROM THE PORT OF HILO, HAWAII, HAWAIIAN ISLANDS TO FOREIGN PORTS DIRECT—FOR THE YEAR ENDING AUG. 1, 1851.

Live stock and vegetables,	$1120 00

EXPORTS COASTWISE.

The plantation of Ahsing & Co. at Makahanaloa consisting of 400 Acres.	
Total amount of sugar sent to Oahu for the year ending August 1, 1851.	401,000lbs
Molasses	18,000 gals.
The plantation of Ahkina, at Puueo, consisting of 90 acres.	
Total amount of sugar sent coastwise for the year ending August 1, 1851.	50,000 lbs.
On hand at plantation	100,000 "
Molasses	3,900 gals.
The plantation of Amoi at Ponoohawaii consisting of 55 acres.	
On hand at the plantation the manufacture of the past 6 months.	20,000 lbs
Total amount of coffee sent coastwise, averaging 13cts.	30,000 lbs.
" " goatskins " " 18 "	6,000
" " Arrow root " " 6 "	35,000 lbs.
Vegetable supplies to 26 Whaleships, at $180 each, for the year ending Aug 1, 1851.	$4,680 00.

Our district is capable of great improvement in agriculture, but the natives have not hitherto had any incentive to cultivate. The surrounding country is admirably adapted to the growth of fruits of various kinds, among which may be enumerated the chirimoya, mango and pomegranate (introductions within the last few years); oranges,

limes and bananas have thriven exceedingly well, and all these fruits with but little attention attain a state of perfection.

GARDEN VEGETABLES also thrive here. The soil in many parts is particularly adapted to the growth of the onion which for quality and flavor it is generally allowed cannot be surpassed. I take the liberty to forward you a sample grown on my farm which is but an average quality of those grown by the natives.

ARROW-ROOT.—Not much attention paid to the culture. It grows wild and from it in this wild state some hundreds of tons per annum might be manufactured at a cost not to exceed 4 cents. Herewith please to receive sample made on my farm.

SWEET POTATOES yield abundantly and approach nigher to the Carolina potato than any other grown on these islands. You will also please receive samples of this production.

COFFEE.—The growth and yield, with attention to the plants, not to be surpassed. Accompanying this please receive a sample bag, the growth of our plantation.

COCOA.—With care this production can be brought to perfection and yields abundantly, as a few trees in my garden fully attest. I accompany a few seeds and when the coming crop shall be ripe it will give me pleasure to supply any who may desire seed.

ORANGES.—It is to be regretted that this fruit is not more extensively cultivated, the few bearing trees yielding abundantly and the fruit being of very superior quality.

LABOR.—With regard to this subject I have but litttle to communicate. Prior to the last couple of years little or nothing has offered to stimulate the native of this district to labor. Every available inducement which I have conceived I have adopted and tried, in order if possible to innoculate them with a spirit of industry, but their natural indolence appears to be so firm rooted that every attempt to overcome it has proven abortive. It is with much regret that I am compelled to acknowledge my fears that the means are yet undiscovered whereby may be produced the radical change, so necessary in this respect to the happiness, increase of comforts and advancement of the Hawaiian race. Still I am willing to hope that such means (notwithstanding my fears to the contrary,) may be discovered, acted upon, and prove productive of the hoped for result.

Hilo, August 1851. B. PITMAN.

As I have not heard from any of the corresponding members ; and have corresponded with several without success in my search after information, I cannot be expected to furnish so full a report as might be desirable but ; I take the liberty of enclosing it under cover to you for disposal at your option.

REPORT,

BY G. RHODES, ESQ., VICE PRESIDENT OF THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY, FOR KAUAI.

The undersigned much regrets that it has fallen to his lot to be the recorder of the bad state of agricultural affairs on this island. Since the formation of the association in 1850, no new plantation has been established, although there are thousands of acres of fertile land unoccupied, which would, if put into cultivation, contribute largely to the national prosperity. The effect produced on the mind of the traveller on our beautiful island is anything but pleasurable when he surveys the large tracts of land, that should support thousands and furnish a large export, utterly neglected and the inhabitants congregated in villages by the sea-side, where they pass their time in the most deplorable idleness, merely growing sufficient kalo for their support.

The plantations already established on the island are generally badly off for laborers and in some cases are fast falling into decay on this account. The dearth of labor is attributable to several causes : as the natural indolence of the native race ; the high prices for food, created by the settlement of California ; the emigration of many of the young men to that country, the determination of the natives in many cases not to work for the foreigners settled among them except on their own terms ; and the unnecessary time that has elapsed in fulfilling a contract to introduce China laborers.

It is believed in some parts of the island that a change is about taking place and that labor ere long will be abundant, and it is pretty certain that in some places the natives do not manifest the same decided disinclination to work that they do in others. The estate of R. W. Wood, Esq., at Koloa, also that of Messrs. Peirce, & Co., at Lihue, have, the writer has been informed, received re-inforcements of laborers from Honolulu and Hawaii. This plan of introducing laborers from other islands will undoubtedly be productive of beneficial results. Some idea may be formed of the position in which agriculturists here for a considerable time past have been placed, from the following facts :—Natives have refused to work for less than four dollars per day ; they now demand at Hanalei one dollar per day and eighteen dollars for breaking in a pair of steers.

There is no doubt that matters are much worse than they would have been had the so long and anxiously expected Chinamen arrived in due season.

The sugar crops are generally expected to be pretty good ; the new plantation of Messrs. Peirce & Co. is flourishing and the works are fast progressing towards completion. These enterprising gentlemen appear to be determined to overcome every obstacle by which they are beset, and it is to be hoped that they will ere long be amply remunerated for the care and expense they have bestowed in subduing the wilderness and rendering it subservient to the uses of civilized life.

The coffee plantation of Mr. Titcomb is in excellent order, the trees healthy, and he expects a tolerably large crop from it. The plantation belonging to Mr. Hunt and myself and those of Messrs. Archer and Wundenberg, should, if in good order, yield at least seventy tons of coffee this year, but I am sorry to say that owing to the want of labor they are in a very bad state and the most we can expect from them is one third of that amount ; and even this we shall not be able to collect if the Chinamen do not arrive, as the natives will not work.

The condition of the public roads under the superintendence of foreigners is wonderfully improved, and the amount appropriated by government for their further improvement will render them tolerably good and easy for travelling on horseback. It is hoped that in the course

of a very few years the whole of the distance between Hanalei and Waimea will be traversed by a good carriage road.

G. RHODES,
Vice Pres. of the R. H. A. S.
for the island of Kauai.

Hanalei, Kauai, July 31, 1851.

ESSAY,

ON THE CULTIVATION OF THE COFFEE TREE AND MANUFACTURE OF ITS PRODUCE, WRITTEN FOR THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY, BY G. RHODES, HANALEI, KAUAI, JULY, 1851.

Pater ipsi colendi
Haud facilem esse viam valuit. *Virg. Geo. Lib.*

Within the whole range of agricultural pursuits it would be difficult to discover any branch affording a more pleasing occupation, or a better subject for contemplation and study, than the cultivation of the coffee tree. In the earlier stages of its growth, a weak and unpromising plant, it becomes under favorable circumstances, by care and the application of science, an object of great beauty and a prolific source of wealth.

With respect to tropical agriculture, independently of the pleasure afforded in watching the full development of the beauty and symmetry of this plant, it possesses the weighty advantage of not requiring so great an outlay in the erection of buildings and provision of machinery for its manufacture as the sugar cane. In our islands it is more certain to find a ready market than indigo, cocoa, cotton, &c., and should the market be overstocked and no immediate sale found for it, instead of deteriorating it improves by keeping.

The great object to be obtained in the cultivation of the coffee tree, is a large annual crop with as little distress to the plant as possible, and to its attainment a judicious use of the pruning knife, as well as

constant care to keep the plant clear of weeds, is necessary ; this is a highly important study to the coffee planter, and one on which there is great diversity of opinion.

With my limited experience I approach the subject with much diffidence, and although I give my own method of cultivation the preference over others, I am far from believing that it may not be materially improved.

The coffee tree is known to, and described by botanists as follows : "Coffea Arabica, or Jasminium Arabicum, a genus of the Pentandria order, belonging to the Mongynia class of plants and ranking in the natural method under the order Rubiacea."

The coffee tree is generally supposed to be a native of Arabia, but according to some authorities there are reasons to believe that it was imported into that country from Ethiopia, where the use of coffee as a beverage had been known from time immemorial. It is said by some that its exhilarating qualities were first discovered by the prior of a convent in Arabia, who observed the effect produced on goats by browsing on the leaves of the plants, and who afterwards prepared the infusion as it is now used and gave it to the monks to keep them awake during their night devotions. There is no doubt that the use of coffee was discovered in the East, and Constantinople was the place where public establishments were first instituted for the use of this then luxury.

It was introduced into England in the thirteenth century, but for a long period was very little used ; the consumption of it however has gradually increased until at the present day it is generally considered one of the necessaries of life.

In the 17th century the Dutch obtained the coffee plant from Arabia which they introduced into their possessions in Batavia, and thence to Amsterdam. Louis the 14th obtained a plant from this place, the seed of which he sent to the French West India Islands, whence the plant was introduced into the British West Indies by Sir Nicholas Laws ; it is probably from this neighborhood that it found its way to South America ; it is also highly probable that the coffee now cultivated throughout the East India Archipelago is from the original stock of the Dutch settlements in Batavia.

Lord Byron is, I believe, entitled to the honor of having first intro-

duced it into these islands from Rio de Janeiro ; Mr. Charlton, H. B. M. late Consul, also introduced some plants from Manila, and later still Capt. Little from the same place or Batavia ; those introduced by Mr. Charlton were planted on H. E. Kekuanaoa's land in Manoa valley, and they are the parent stock of the Hawaiian plantations.

The tree will thrive in most of our lands which are sheltered from the violence of the trade winds, and in which the soil is sufficiently deep to allow the tap root to descend two and a half or three feet ; it delights, however, in rich ravines and valleys, in which the soil is alluvial, and in favorable situations the tree attains an extraordinary size, sometimes yielding eight, ten, and even as high as twelve pounds of fruits. The whole of that large belt of rich land on the west coast of Hawaii, situated between the lava on the sea-side, and the range of forest trees on the mountains, and the corresponding lands on the island of Maui, would, I have no doubt, furnish excellent coffee grounds.

No lands on which the soil is not two or three feet deep, or in which volcanic remains are very perceptible should be employed.

The coffeee tree in its natural state grows to fifteen or twenty feet in height ; in Arabia it is said to attain the height of thirty feet ; the wood is soft and white and is covered with a greyish bark ; it is furnished with a long fibrous red tap root, the branches are cylindrical and jointed, and shoot alternately and at nearly regular intervals quite round the tree ; from each joint issue the leaves in pairs, these are of a beautiful dark green color and glossy on the upper side ; they are nearly oval but pointed at the end about four inches long and two wide, with a short footstalk ; they bear a resemblance to the Portugal laurel ; the flowers spring from the joints in clusters ; they are of a pure white, and delicious fragrance ; they are formed of single petals, and are much like the jasmine but smaller, it is from this resemblance that it derives its botanical name. Upon the flowers falling the berry is discovered of a pale green color, but it soon assumes the dark green hue, which it retains until full-grown when the fruit becomes first whitish, afterwards a bright scarlet, and at length when quite ripe of a deep red color, in this state it bears some resemblance in appearance to cherries. The flowering season lasts, with little variation, from the end of January till the middle of May, and during this time

there are generally three distinct blossoming times when the trees simultaneously break out into flower ; at these times the plantation presents a most beautiful appearance, and the perfume of the flowers pervades the air ; viewed from an eminence it appears as though the trees were covered with flakes of snow ; they remain in this state of surpassing beauty but three or four days when the flowers drop. The berries grow very closely together and in such numbers that as they increase in size the overloaded branches are gradually borne down towards the ground by their weight, and it sometimes happens that they actually break beneath their burden.

In consequence of the different times of blossoming and close growth of the berries, they cannot all ripen together ; this is a wise provision of beneficent nature, by which time is given to secure the crop, for should the whole field ripen at once it would be impossible to save it.

About the time that coffee is full grown and before it ripens, rain is necessary to perfect the berries ; in this state should it be favored with a few soaking showers the coffee will be much improved both in quality and quantity ; on the contrary, should the weather be perfectly dry, a few weeks previous to the ripening of the coffee, the berries will be generally found small and shrivelled.

Crop generally begins about the middle of August, and lasts without intermission till the end of November when the fruit becomes scarce ; at the last picking it will be necessary to gather all that remains whether ripe or not, in order to stop the exhaustion of the tree ; an exercise of judgment will be necessary here, to determine the proper time for the last picking so as to prevent too great a waste by the gathering of a large quantity of unripe fruit.

The coffee tree generally commences bearing about two years after planting, but does not arrive at its full bearing point until it is five years old. As the tree advances in age, its produce is generally less abundant but superior in quality ; it lasts fifteen or twenty years, and in the island of Jamaica there are records of coffee fields which have been in bearing for more than half a century.

In forming coffee plantations at these islands, it will generally be found necessary to commence by making nurseries, and for this purpose it is requisite to choose the best seed ; the largest and most fully

ripe should be selected from a perfectly healthy tree ; the pulp or outside covering should be removed by hand, and the seed should then be carefully dried in the shade for a few days ; it should not be used after a month old, if it is possible to obtain fresh ; no seed that has fallen from the trees, nor any taken from unhealthy trees should be employed, as it cannot be expected that good, healthy, and prolific plants can be produced from unhealthy or shrivelled seed.

The land chosen for the formation of the nurseries should be moderately rich and in an open and tolerably dry situation, but not exposed to any strong wind ; it should, in the first place, be thoroughly dug, all roots of trees and weeds eradicated, and then laid out in beds about four feet wide ; the seed should be planted an inch deep and six inches apart, in drills also six inches from each other.

Should it be contemplated to establish a large plantation, several of these nurseries should be formed in different parts of the land to save time in transplanting the young plants, and to prevent them as much as possible from suffering by a long exposure upon being taken from the ground. After the seeds are sown the beds must be kept clear of weeds by hand.

In about a month after the seeds have been planted they will appear above ground on a slender stalk which grows to the height of two inches, something in the manner of a bean, when the husk falls off and the plant will remain with two roundish seed leaves exposed : it is at this period an object of great attraction to grubs and other vermin which gnaw through the stalk and kill the plant ; these must be sought for every morning about sunrise, and destroyed ; they will generally be found about an inch below the surface of the earth, by the root of a young plant which they have gnawed asunder ; were it not for these destructive vermin, which always abound in new land, a plantation might be formed by lining out the ground and planting the seed on the spot the tree was destined to occupy, as its growth would never be checked, and the roots would take firmer hold of the ground than those of a plant which had been subjected to the operation of transplanting.

The nurseries being formed, the land intended to be used as a coffee field should be separated from all pasture grounds ; for no domestic animals, such as cattle, horses, mules, goats, &c., should be suffered to roam about a plantation ; if they were, they would do an incalcula-

ble deal of mischief by browsing on the leaves, breaking the branches, gnawing the bark of the trees, &c. ; horned cattle are particularly mischievous. A fence made of the hau, so abundant on these islands, will be found to amply suffice for the exclusion from plantations of all these animals except the last named ; it is made by digging a trench of a few inches wide and two feet deep, and inserting therein sticks of hau, three or four inches thick, and seven or eight feet long, two or three inches apart ; the earth is then filled in and well-trodden down, and two rails, one eighteen inches from the ground, and the other two and a half feet higher, are tied by some stout bark of the same plant all along the fence ; by the time the rails decay, the greater part of the sticks will have taken root ; by interlacing the branches, a good and impenetrable live fence will be formed at the expiration of two years.

The due preparation of the land for the reception of the young plants is a subject of great importance. It is of the utmost consequence to remember that although the coffee tree thrives best in a rich alluvial, and moderately damp soil, it will never succeed in a place where the water remains in pools, let the soil be as rich as it may. However some indigenous plants may thrive in a cold, wet, sour soil, the coffee tree will invariably perish in such a locality. I should therefore strenuously advise, that, as soon as the seeds are in the ground, the land intended for the coffee field, especially if it be a low plain, be surveyed, and that drains be opened throughout to carry off the immense quantities of rain water with which these islands, as well as most mountainous countries are sometimes deluged. The land should then be ploughed, and if a level, laid out in beds of eight feet wide, with a furrow between each bed leading to the drain. One or two crops of maize, potatoes or any other annual, may be advantageously taken off before the coffee trees are planted out.

When the tree has attained the height of twelve or fifteen inches it is fit for removal to the field ; at this stage of its growth it is more capable of resisting any injury it may sustain in transplantation than it would have been at any previous period.

The proper time for transplantation is at the coldest season of the year, when the sap is down and the plant not likely to receive any check in its growth ; the time should be chosen when the young wood

is ripened, and before the fresh growth has commenced. No transplanting should be carried on late in the spring nor in the summer months, for, as the young plants are generally in a vigorous state of growth at these seasons, the sudden check they would receive, the (in many cases) unavoidable exposure of their roots to the atmosphere, and the fervid heat of the sun combined, would frequently destroy the plants, or at least put them back one season in their growth.

The proper season for transplantation having arrived, the land, being cleared of weeds and trenched, is to be lined, and the proper spot assigned to, and prepared for the reception of, each tree.

The distance to be preserved between the trees is a matter of great consequence to their aftergrowth ; if they are planted too close to each other the air will not circulate freely between them, and the branches will wither and die for want of air and light ; trees are frequently seen in this state much resembling an open umbrella, with a good shew of foliage on their tops, but the stems entirely denuded. It will here be proper to say that should the primaries, which are the branches directly proceeding from the trunk of the tree, by any means, be destroyed, a fresh supply can never be reproduced from the same tree, so that the injury is irreparable.

I should recommend the plants to be placed eight feet apart, and at right angles to each other ; if the soil is very rich, nine feet apart might, perhaps, not be too much ; it will be found, however, that in most situations a uniform distance of eight feet will afford ample space for their growth, and prevent them from interlacing their branches with their neighbors, it will also allow the laborers room to perform their operations of weeding, gathering the crop, pruning, &c., without injuring the tree ; on hill-sides the trees may generally be advantageously planted somewhat closer. The reasons that they should be planted at right angles, rather than in the quincunx or lozenge form are, that a freer circulation of air can be preserved between them, and that the after cultivation of the plant is rendered much more simple and cheap by this method, as will presently be seen.

The method of lining the land previously to setting out the young plants is, to run a row of long thin stakes at the distance of about a couple of hundred feet from each other, in a straight line quite through the field ; this row of stakes is to be intersected by another row of the

same description, stuck in the ground at right angles to the first row ; the second row is to be intersected by a third, also at right angles to it, and of course parallel to the first, at the distance, say, of one hundred and sixty feet from the point of intersection of the first and second rows ; this will allow space for a series of rows of twenty trees each and equi-distant eight feet. The line is next to be stretched along each row of stakes, and pegs inserted in the ground at every eight feet from each other ; these and all other rows from which the line is straitened, should be measured off with a rod to insure exactness ; for the remainder of the field it will only be necessary to mark the line at every eight feet with a piece of linen or woollen stuff, the line being adjusted to the proper length, one of the marks or flags is made to touch one of the pegs in the first row, the line is then straitened, and the proper flag made to touch its corresponding peg, in the parallel rows, and so on till the whole is finished.

In staking out the land at the commencement, and in making all the subsequent head-rows, or rows upon which the line is to be straitened, a small instrument called a sight will be found of great service ; this is a small block of wood about six inches square and four thick ; it is sawed half through one of its flat sides in each direction and exactly at right angles, the lines crossing each other in the centre block, a hole is then bored in the centre of the side opposite to that on which the slits are made by the saw, and perpendicular to the surface, into which a stick is inserted ; this stick is of a proper length when stuck in the ground to admit of the eye being applied to the slits. A little care bestowed on the exact lining of the land will be abundantly repaid by the subsequent beautiful appearance of the field, and the ease with which it can be kept clear of weeds.

A sufficient quantity of land being lined, a laborer follows with a spade, and digs a hole at each peg about a foot deep and sixteen or eighteen inches in diameter, the plants are then brought from the nearest nursery, care being taken that a quantity of earth is left about the roots of each, and one placed in each hole ; it is then held in a perpendicular position with one hand while the earth is filled in with the other, the transplantation being completed by the earth being firmly trodden in round the plant. A skillful workman can, in this manner, when the nurseries are not very distant, transplant four or five hundred young trees in one day.

Some persons put two or three plants in one hole, and after some time pull up or cut away the weaker ones, and leave that which appears to be strongest and most healthy, but the propriety of this plan I think is very questionable, as the plants must to a greater or less extent interfere with each other and the nourishment supplied by the earth in so small a compass must be divided instead of being appropriated solely to the support of one plant.

Another excellent plan to form a plantation, or to increase the number of trees on a plantation already formed, is from a description of plant, which, for want of a better name, I shall call a sucker ; these suckers are generally found about plantations that have been in operation for some years, and consist of old or neglected nurseries in which the plants have become stalky, and have attained the height of two or three feet, and in some cases where seeds have been carried by rats or birds, or from other causes have taken root and grown to the above height in different parts of the plantation.

When these suckers are used, they are taken up, cut to a uniform length of about eighteen inches, all the side-roots trimmed off, and the tap root cut to a point. They are then inserted, each in its proper place, as indicated by the pegs, about twelve inches in the ground, about six inches of the stem being left exposed above the surface ; stout, healthy suckers should be selected rather than those which are weak and spindly looking. Trees grown in this manner are not, during the earliest stages of their growth, so subject to the attack of insects as those used by the ordinary method of seed, and being buried to a considerable depth the roots of the plants at once take a firm hold of the ground. Where these suckers can be obtained in abundance, the employment of them is in many respects preferable to that of plants raised from seed.

The young trees being now planted out, the only care they require is to keep the roots clear of weeds ; tobacco, pine-apples, maize, bananas, potatoes &c., may be grown between the rows for the next two years with advantage to the coffee tree, as the continual stirring and loosening of the earth, that their cultivation requires, enable its roots to penetrate the soil on every side, and thus to seek that nourishment which it would be unable to do, did the earth remain hard and unbroken ; for my own part I prefer the cultivation of potatoes

between the rows of young coffee trees to that of any other plant, as it is necessary that the earth should be turned up to a greater depth for them than for the other plants I have named, and there is no fear that the trees will be injured by them in any stage of their growth; if bananas are planted between the rows they are apt during high winds to be blown down and to fall upon and injure the trees. I have tried most of the plants I have named between young coffee trees, and have found that those, from between which, two or three crops of potatoes had been taken off in the course of a year and a half were larger, healthier, and better in every respect than those which were merely kept clear of weeds without any other kind of cultivation going on at the same time, or than trees between which the cultivation of other plants was carried on. No climbing plants of any description should be grown amongst coffee trees, as they would retard their growth, and in all probability do much damage by breaking the branches of the trees, &c.

In some countries it is customary to plant alternately a row of coffee trees and a row of bananas, each row being six feet apart, and the trees in the rows also six feet distant from each other; the object of this method is to supply the laborers with food, but I consider the plan of preserving the uniform distance of eight feet between the trees far superior.

The only method I have ever heard of being employed to keep the weeds down in a coffee plantation is with the common hoe, and I practised it myself for some years, but the operation is expensive and slow. I have latterly made use of a single horse plough for this purpose, with perfect success, and I consider it an invaluable implement in the cultivation of the coffee tree. When the plantation is well laid out, and the trees are regularly planted so that they appear to form rows in whatever direction they are viewed from, the plough can be employed to the greatest advantage. It is first run down the rows, commencing as near to the tree as prudence will admit of, turning the earth over towards the tree; it is then run back in the same avenue, but turning the earth over in the direction of, and close to the next row of trees, this process is repeated until the whole surface is turned over and a small furrow or trench is left in the middle of each space between the rows, and so on until the whole field is lightly ploughed

over, it will be necessary for one or two men to follow the plough to hoe up the weeds that are left close to the stems of the trees. When the weeds recommence growing, the land should be cross-ploughed in the same manner. After a few ploughings should the earth be too thickly heaped about the stems of the trees, or should the furrows between them be too deep, the evil may be remedied at the next ploughing by turning the earth over in the contrary direction, namely from the trees towards the centre of each avenue.

The plough is useful in the cultivation of the coffee tree at all stages of its growth ; while young and during the time that there is a large surface of the land to be kept clean it does its work well and expeditiously, and when the tree has attained its full growth, it not only keeps the land clean of weeds but by occasionally severing the fibrous roots of the plant, it stimulates it to make fresh exertions and to throw out a large number of feeders in every direction which easily penetrate the loosened soil, and cause the tree to thrive wonderfully.

A single horse plough kept constantly going, will, when the weeds are not too high, do as much work as ten men.

Weeds should never be drawn away from the trees and left in the middle of the space between the rows ; should such a plan be adopted and persisted in, the trees would be left in a sort of trench by the repeated withdrawal of earth from their roots, about which in rainy seasons the water would collect in pools, and very soon destroy the plant.

At the expiration of two years from the time of transplantation the trees will generally bear a few berries, and at the end of the third year the quantity of fruit borne will generally repay the expense of collecting it. The tree is now an object of remarkable beauty and symmetry, it is of a conical form with a rather broad base and about six feet high ; its foliage is of a beautiful dark, glossy green, and if the land has been well lined and proper care taken to keep it clear of weeds, I know of no more pleasing object in nature, than a plantation of these trees ; it will besides, for a long series of years, under proper management, return fifty-fold to the planter for the care and expense he has bestowed upon it during the first few years of its commencement. Should there be on the plantation a good sprinkling of willows, orange and breadfruit trees, and about the streams and pools of water

bamboos growing, the pleasing effect will be increased, and the value of the plantation enhanced, and on lands destined for coffee plantations where these plants are not already found growing, I should recommend that one of the first steps on the occupation of the land should be the planting of them in suitable places. They are all ornamental; bamboo is useful in erecting stages for the curing of the coffee and for many other purposes; willow in making baskets for its carriage, and breadfruit is a nutritious and pleasant article of food for every person resident on the plantation during several months in the year, and all when once established need very little further attention from the planter.

It is about this time, namely, three years after transplantation, that the operation called topping is performed; this is nothing more than the cutting off with a sharp knife the few inches of growth that form the crown or top of the tree, and it should not undergo this operation till it is fully six feet high, the point to be cut at is the junction of the ripe or grey wood with the green, this will leave the tree from five to five and a half feet in height, and at this height the tree in future is to be kept. Simple as is the operation of topping, it is productive of a wonderful effect upon the tree which in the course of twelve months quite changes its appearance. The stem thickens, lateral branches shoot from the primaries and suckers spring from each joint of the stem, but more especially from the head; these latter should be carefully removed every month or two as they are of no service to the plant and rob it of the juices which should go to the support of the bearing wood and fruit.

The utility of pruning is questioned by some planters, but I think all reasoning both from circumstance and by analogy will shew the benefit that ensues from a proper use of the pruning knife. If we consider that the coffee tree naturally eighteen or twenty feet high, is by artificial means, dwarfed to the height of five and a half feet, and that the roots of the plant are in as active operation and great vitality as though the tree still retained its natural height, we shall at once discover that a greater supply of nourishment is appropriated by the tree than it can consume in its reduced state: it continually makes efforts to increase its height, but they are continually rendered abortive by the crops of suckers being destroyed as fast as they make their appear-

ance. No alternative remains then for the tree but to increase in width, which it does to so extraordinary a degree that under favorable circumstances, unless prevented by cutting, in the course of a very few years, it becomes completely matted and clogged with foliage, and although upon a superficial view it presents a beautiful and apparently healthy appearance, being large and of a rich deep green color, it is entirely useless being quite barren; the branches when examined will be discovered to be weak and spindly and incapable of bearing. Some of the causes of this barrenness are the want of a free circulation of light and air which is prevented by the excessive luxuriance of the foliage, and the harboring of noxious vapors in wet weather from the same cause, also the continual accumulation of wood which having done its work and not being removed robs the tree of the support which should be bestowed on the young bearing wood and fruit. To remedy this diseased state the pruning knife is absolutely necessary.

The bearing qualities of most fruit trees in temperate climates are considered to be improved by a light annual pruning, how much more so must it be the case in tropical climates where vegetation is so much more luxuriant, and where the trees are subjected to a process productive of such wonderful effects on their growth as that of topping.

With difference of circumstances the coffee tree will of course require different methods and amounts of pruning. On poor soils and in places where the trees are small and their foliage thin, it will hardly be necessary to do more than to take out the dead wood and suckers, with here and there a straggling branch that has already borne and seems incapable of being of any further service. In rich soils and places where the growth is exuberant, the tree will require a different treatment. It would be impossible to give directions to enable a person unacquainted with the habits of the tree to become an expert pruner for which a considerable amount of experience is absolutely necessary. I shall therefore content myself with laying down a few short rules to give a general idea as to what wood is to be cut out and what left.

It must be borne in mind that the object of pruning is three-fold, viz: to remove all the superfluous and useless wood, to stimulate the tree by cutting to throw out a new supply of young wood, and to admit the

light and cause a free circulation of air throughout the tree. All wood then should be cut away which grows within six inches of the stem, as well as that which shoots out in a cross direction lying over the other branches and causing an appearance of irregularity ; especially should be removed that wood which has done its work, and hangs about the tree long, straggling and weak, with only two large leaves at the end of the branch.

There is another branch to which the trees become subject after they have arrived at maturity, and which should be cut out at the socket before it becomes too large ; it is called by the French planters "la branche gourmande," and from them, English coffee planters have given it the name of "the gormandizer ;" it is produced on young plants by improper pruning, or careless cutting, or breaking some of the primary branches, which as I have before observed, when once destroyed, are never re-produced ; the gormandizer also, according to the best authorities naturally makes its appearance on old and worn fields ; it is of the sucker tribe but horizontal instead of vertical and projects far beyond the rest of the tree ; it is not inaptly named, as it robs the tree of most of its aliment and causes it to become weakly and barren.

Great care should be taken that too free use be not made of the pruning knife, and that it is not put into the hands of careless or ignorant persons, should this caution not be attended to the consequences might be most disastrous ; once for all, none of the primaries nor any young nor healthy wood should on any account be removed. The pruning should be commenced as early as possible after the crop has been secured and should be finished before the first blossoming.

When the berries are thoroughly ripe crop commences, and on an extensive plantation a large number of additional hands, principally women, can generally be advantageously employed. The method of collecting the produce is by hand, each picker takes a space between two rows of trees and picks on each side of him as he goes along, he carries a small calabash or bag, kept open at the mouth, which as fast as filled he empties into a larger one at a small distance, when this larger one is filled it is carried to the works and emptied into a hopper above the pulping mill. A diligent picker, when ripe coffee is plentiful will frequently gather four bushels equal to about forty

pounds of cured coffee per day. I have found women to be more expert pickers than men.

When there is a sufficiency of coffee in the hopper the mill is put in operation and the berries are separated from the hulls or skins; this operation is easily effected by passing the coffee between a heavy cylinder covered with roughened copper, or other metal, on which a stream of water is kept continually running, and a bar of wood, lined with metal, wedges so close to the cylinder as just to admit the berries, which being thus subjected to a heavy pressure are deprived of their hull, the greater part of which is carried by the roughened surface of the roller between itself and another bar of wood set so close to it as not to admit the berries which now appear in their parchment covering, which latter is enveloped in a sort of gummy mucilage. The broken hulls are thus discharged at one end of the mill while the coffee falls on a sieve which is set in motion with the rest of the machinery and thus separated from the few hulls that escape being carried away between the cylinder and second crossbar. No coffee should be kept in the hull longer than one night, for if kept any length of time the hull becomes tough and leathery and exceedingly difficult to be removed.

The coffee is next soaked in water for twenty four hours for the purpose of removing the gummy matter in which it is enveloped; two water-tight stone tanks, each sufficiently large to contain a day's grinding or pulping will be found sufficient for this purpose. I should recommend them to be built about eight feet square, three feet deep and with a shelving bottom. After the soaking it is to be repeatedly washed to render it perfectly clean, it is then thinly spread on the terraces to dry, these should be built gradually sloping from the centres to the sides, to allow the moisture to drain off, they should also be furnished with water-tight receptacles in their centres in which the partially dry coffee is thrown in the event of a shower and at night. The surface of the terraces is made even either by being flagged with stone slabs, or covered with cement; care should be taken at the commencement of the crop that they are in good order, for if not the coffee will be broken and of bad quality. The roofs of the drying and storehouses should also be carefully looked after and all leaks stopped.

The coffee in its partially dry state should never be heaped up, or

it would heat and spoil, but when sufficiently dry to be housed, it should be spread out a few inches thick on flat forms, and even here it should be continually stirred over until its turn arrives to be subjected to the parchmenting or peeling operation. It will generally be fit to be housed after the third day's drying, provided the weather is uninterruptedly fine; the grain has by this time considerably shrunk within its parchment covering, and instead of completely filling it as it did at the time of peeling, it is upon being shaken heard to rattle inside. It sometimes happens during crop that a succession of rainy weather sets in, during this time the operations in the mill-house must, to a certain extent be interrupted; no drying can of course go on, and the accumulation of coffee on the terraces will be very great; in wet seasons it must sometimes lie exposed for a period of five or six weeks; during the whole of this time it should be thoroughly turned over and stirred two or three times each day to prevent it from growing. The clothing of the pickers should be attended to at these seasons, and as on merely showery days the picking can not be stopped, in places where labor is cheap I think the coffee grower would find it to his interest to distribute coarse woolen shirts among them gratis.

After the fifth or sixth day's exposure to the sun and wind, the parchment will be found quite dry and friable, and the coffee will be fit for the mill, if upon a few berries being rubbed between the hands the parchment is easily broken; it cannot be too dry; in this state it is passed under a heavy grooved wooden roller which is made to resolve in a trough also grooved; by this means the parchment is broken, and a thin pellicle or membrane within the parchment, called the silver skin, is removed. There is another method which is very effectual, but which requires rather more time to remove these two coverings by a machine called a peeling mill; this is a sort of drum the circumference and ends of which are made of roughened sheet-iron: it is made to revolve rather slowly on its axis; on the same axis are four fanners or beaters also made of roughened sheet-iron, and which revolve inside the drum with great celerity: a quantity of coffee is put inside, the machine is set in motion and in a few minutes the coffee is turned out beautifully cleaned—it is then winnowed, packed, and sent to market.

In divesting coffee of the parchment and silver skin I make use of

both these machines, the roller first and the drum afterwards with very good effect ; in this manner the coffee does not require to be kept so long in the drum as it would do were it not first passed under the roller. Two men with two horses or mules may in this manner easily prepare twelve hundred pounds of merchantable coffee per day.

In some parts of Arabia the coffee is not subjected to any process of preparation for market for a considerable period, but when brought in from the field is dried on mats, it is then spread out in thin layers in buildings open to the atmosphere, where it remains, being continually stirred and turned over for a twelvemonth before the coverings are removed. There is no doubt that coffee prepared in this manner retains a much greater aroma and richer flavor than that prepared in the manner I have above described, but it would be quite inexpedient, if not impossible for us to adopt the same plan.

In some parts of the East also an infusion is made and sold in the markets, of the hulls of the berry as they come from the mill, but the refined palate of the European or American would not approve of this insipid beverage ; the only use made of the hulls with us is for the purpose of manure, and there is no doubt that all the refuse of the mill-house returned to the field is of essential service ; a small portion both of the hulls and parchment chaff should be appropriated to, and buried at the roots of each tree.

It is a matter of some consequence to determine what is the best and cheapest method of packing the produce. I have hitherto employed bags made of the rushes that are found in abundance about the low lands for that purpose, but it seems that the increasing scarcity of labor will, ere long, compel us to have recourse to imported materials for our packages.

Coffee should not be stored near tobacco, spice, or any commodity of pungency or strong scent, for however good the packages may be, it will always in such a situation, to a certain extent become tinctured with another article's to the injury of its own flavor.

The method of preparing the infusion for the table is too well known to need a description of the process from me, the only directions that I consider necessary to give for the obtaining of this delicious beverage in perfection are, first :—To roast the coffee till it becomes of a uniform chocolate color without its being at all charred, as it is in this

state that its aromatic and refreshing qualities seem to be most fully developed ; and second :—That a sufficiency of the ground coffee be used in infusing ; the proportion of two ounces of coffee to a pint of water will afford a beverage at once delicious in flavor and exhilarating in its effects, and against which the objections that are made to the use of fermented or alcoholic drinks cannot reasonably be urged.

REPORT ON SHEEP.

BY GEORGE S. KENWAY.

In considering the subject of raising sheep on these islands the first qustion that naturally presents itself is,—to what extent is this country adapted for the purpose ? Experiments hitherto have been on so small a scale and pursued by parties, who, generally speaking were unacquainted with the shepherd's art, that we are scarcely yet in a position to answer the question.

That many portions of the islands are well calculated for sheep lands is however beyond doubt, and we need only trace from their origin the history of some of the few small flocks already scattered about the hills and plains of Hawaii to be satisfied of this. Left pretty nearly to their own guidance, scarcely even watched by their inexperienced tenders, suffered to roam at large day and night, or at night huddled together in a close, dirty, unsheltered fold, sheared, after a fashion, once in three or four years and sometimes not at all ; lambs and rams and ewes, hairy sheep, and woolly sheep and perchance goats and animals that might be taken for either, all running together, chased by dogs, torn by bushes, smothered in mud and lambing from January to December, they have still thriven and increased, supplied Honolulu with a trifle of excellent mutton, filled many bags with very miscellaneous wool, started some new ideas among lately arrived "colony" folks, and they still look brisk and hearty and open to any reasonable amount of civilization.

First, then, where are the lands best adapted for experiments on a larger scale ? the best sheep lands ? They are just those lands scarcely fit for any other purpose, the dry hill sides and plains on the lee, where grass is short and scant but sweet, and water scarce, where the dry soil preserves a healthy foot and the poverty of the pasture requires the animals to travel. The outer plain of Waimea, extending to the base of Mauna Kea and sloping towards the sea, a hitherto unused and useless tract, comprising at the least an area of 30 square miles, is a fine example, and on this land alone, (which of the kind is probably the largest on the islands,) a profitable and interesting population might be brought to exist, break the present dismal silence and redeem the idle wilderness.

But sheep to be profitable must be well cared for, and very artificially treated. They require more constant attention than any other domesticated animals, and such attention cannot be expected from the natives until they are first shown its good effects and profitable consequence. In this country, so far as experience has yet proved, sheep are peculiarly fortunate, being subject to none of those distressing and often fatal diseases so familiar to shepherds from the older countries. And if this natural health can be preserved, (though whether it is a characteristic of the climate or merely owing to the small size of our present flocks remains to be proved,) a most important and disagreeable item of labor, will be saved. Still very much is required, and above every thing *system*. The following suggestions may be worth attention :—

1st. The pens or folds now used here are stationary, and must be unclean, injuring the feet and greatly damaging the wool. *Moveable folds* are preferable, constructed of light close hurldles which may easily be shifted. Thus the flock will always have a clean sweet and generally dry resting-place at night.

2nd. The rams here are allowed to run with the flocks, and there is no lambing season. The Ewes are dropping lambs all the year round and as fresh dropped lambs cannot follow the flock, they are left behind, either alone or with their mothers, and frequently lost. The rams should be kept apart and only visit the ewes at a certain season. The shepherd would know when to expect the lambs and make suitable preparations, keeping the young lambs with their mothers in a separ-

ate enclosure and giving that attention to *the whole* for a short period, which otherwise is required from him all the year round. This plan also preserves a greater uniformity in the flock, so that both sheep and wool may be distinctly classified.

3d. *Cutting* the male lambs. This should be done within a month or six weeks from birth, and by having a lambing season this also would be the work of a particular season only, and the shepherd could be certain that his work was effectual.

In catching sheep, which is frequently necessary whilst the flock is grazing, a native would use a lasso or run his victim down, either way harassing the sheep and making at least but a bungling job of it This seems a trifling matter, but as the shepherd should be on the best possible terms with his flock he should do all things quietly, and a shepherd's crook is better than either lasso or long legs, and a shepherd should never be without one.

4th. *Shearing*.—Let it be done yearly of course. And we cannot do better than receive instructions from some of the Australian shepherds, who have lately wandered hither, as to the manner of conducting the operation, and the washing which should precede it.

5th. *Protection from Dogs*.—Vigilance is the best security. Wild dogs are doubtless troublesome, and now and then destructive, but could the truth be known, a more insignificant pack of native pets, whose beauty and utility are about on a par, would prove oftentimes to be the real delinquents.

And now as to the best breed of sheep, there will of course be divers opinions. But every body will allow that what we most require are sheep that will yield fine wool and good mutton, and can easily be taken to market. The Merino sheep combine these qualities, their wool is amongst the finest in the world, and sustains its character in a hot climate. Their mutton is sweet and good, they fatten readily and their carcasses are not unwieldy. We have half and quarter breed merinos here already, the produce of some pure merino rams imported by Mr. French some years ago, but the breed is fast degenerating. Pure merino rams and ewes can be imported from Sydney or Port Philip, where the rams can be bought for $15 to $25 each and the ewes for much less.

In importing sheep, especial care must be taken that they be strict-

ly scrutinized by some competent person on their arrival, that no disease be imported with them, and it would be the safest plan even should such sheep appear in perfect health, to keep them alone for a time, that any lurking fault might be detected ere harm is done.

That the foregoing suggestions may be better received I should explain that they are written down after many conversations on the subject with a thoroughly practical man, a Scotchman from the highlands, one who has tramped over the heather, with his bleating flocks since he was a boy—who has known the joy of health and summer sunshine on the mountain tops, smarted for years in the drifting snow storms and can talk most patriotically of Scotch mists—whose collie dog was his faithful companion and bosom friend, and whose last experience was the charge of forty thousand sheep in South Australia, *forbye* large herds of kyne. And it is to be hoped that he is one of the number whose past experience shall fall like good seed on these islands of ours and produce a thousand fold.

And if our limited capabilities are insufficient to promise an extensive export, we can at least manufacture our own wool. Useful cloths and blankets and a hundred articles of domestic need may be produced from our own material, by our own people, to their benefit every way, and our Hawaiian homespun may yet bear to be named with Irish frieze, Welsh flannel and Scotch tweed. The spinning wheel may replace the kapa hamali, and knitting needles in the hands of Hawaiian matrons may become more pleasing companions than sucking puppy dogs and dry nursed little black pigs.

Before closing this, I fear, very lame report, I would suggest whether the *Alpaca* might not be introduced here with good effect. Let those who know something of this animal give their opinion.

Waimea, Hawaii, 24th July, 1851.

REPORT ON NEAT CATTLE.

The committee of the agricultural society appointed to report on the state of cattle and cattle-farming generally in the Hawaiian Islands, beg to lay the following report before the society.

It is necessary, however, to premise that these observations have been made in the island of Oahu alone, nevertheless much of what is stated here will be found applicable in a great measure to the other Hawaiian Islands. In the first place it appears that great care must be taken by the cattle and owners to prevent the lands from becoming exhausted by allowing the increase of their stock, to exceed the decrease, more especially as from the increasing facilities of communication between the islands and the certainty of steamers running here very shortly, cattle from the other islands of the group will be brought into competition with the cattle of Oahu.

Of the breed of cattle in these islands but little can be said in the way of commendation. The origin of the greater proportion may be traced to cattle imported from the coast of America. As but few were imported in the beginning it follows that breeding in and in has been carried to a very deteriorating extent, especially when the size of the islands is taken into consideration. On a vast continent like America the descendants of any one pair of animals would become so different from the parent stock and from each other in a few years by the modifications of difference of soil, climate, food, &c., by so many and various causes, in fact, that greater varieties would be found in three or four generations there, than there would be in ten or twenty where the same causes do not exist.

Since the first introduction of cattle here a few have been imported at various times, but up to the present time very few have taken pains to make the most of the advantages which might have been derived from such infusion of fresh blood by making a selection of the best cows, putting them to the best bulls and again doing the same by their produce so as to counteract as much as possible the ill effects arising from a small original stock and a limited locality.

In most of the herds here traces may be discovered of the breeds imported from some of the other islands of the Pacific, from Sydney, and from Columbia River.

Within the last twelve months a very valuable accession has been made to the stock already here by the arrival from V. Dieman's Land of a pure breed Angus bull, originally imported from Scotland to Van Dieman's Land, a young Hereford bull, and two well bred cows in calf at the time of their arrival to the Angus Bull. The cows have already since their arrival here produced three calves, one male and two females to the Angus bull and the great and obvious superiority of these over any of the native cattle although running on the same land and treated in the same manner is a sufficient proof that so far as soil and climate go these islands are capable of producing beef equal to any in the world.

To produce good beef however, it will not do to allow growing heifers of eighteen months old to rear calves at an age when they have as much as they can do to rear themselves, their wretched and stunted offspring being again in their turn allowed to rear their wretched abortions, thus making each generation worse than the preceding one; nor to allow old cows to go on rearing calves until they die of old age, each calf becoming worse than the last, losing all tendency to fatten, and the females becoming more and more unfitted for dairy purposes every generation.

The committee cannot conclude their report without calling the attention of cattle owners to the great advantages to be derived from making the cattle as tame as possible, and every cattle owner will acknowledge that the calves of the dairy cows are more disposed to fatten than any of the other cattle on the same lands.

However as from the present competition and from the excess of the increase over the decrease on the already heavily stocked lands, keeping bad cattle must be a losing business, the committee trusts that an improved system of management will gradually take the place of the present one, and that next year it will be enabled to report more favorably concerning Hawaiian cattle.

"GOD SAVE THE KING."

JOHN MEEK:
H. SEA.

REPORT ON HORSES.

Gentlemen of the Royal Hawaiian Agricultural Society :

Your committee (appointed at the first meeting of this society, one year ago,) to furnish such information as might be deemed of value, relative to the breeding of Horses on the islands of this group, have now to report as follows, viz :—

That very laudable efforts have been made within the last three years to improve the present breed by the importation of four stallions, brought here by private individuals. Two of these came from Chile, one from the United States and one from Sydney.

By introducing these stallions a beneficial change has been commenced and some few fine, large-sized, young horses are now beginning to be seen foaled by our best native mares.

Some few forcing mares have also been imported and although perhaps of no better blood than the native stock, they are of larger size and will tend to improve the present stock in this respect, which is a great desideratum.

There are among the different islands some fine breeding mares, foaling good colts, when not any attention whatever is paid to putting them with proper stallion. But there are some evils existing among us that if not eradicated or greatly mollified will eventually ruin the stock of island horses.

Foremost among these is the enormous number of inferior stallions. Indeed it is a notorious fact that they will not be either at the trouble or expense of having a deformed colt altered ; almost invariably allowing such to end their days entire.

Donkeys in crowds running at large, are if possible, a still greater nuisance.

Under such circumstances and entertaining these views, your committee have taken the liberty to offer the following suggestions :—

Could not our rulers be prevailed upon to pass a law in effect somewhat as follows : Limiting the number of stallions in each district to a reasonable number. Said stallions to be approved by proper committees, (appointed as may be deemed best,) who shall recommend such prices as will not exclude any natives who own mares from de-

riving the same benefit from their rise, as their more fortunate white neighbors.

A word in relation to the raising of good and large-sized mules and we have done.

It seeems to your committee that in this respect it would be a great benefit could the present tax on mules be rescinded for at least a few years.

The natives universally object to their mares foaling mule colts, on this ground principally.

Now it is almost universally conceded, that for many uses on plantations and farms, at these islands, mules are more desirable and consequently actually of greater value than ordinary horses.

But for such uses it is desirable that they be large and strong, and therefore it is necessary that some greater care be bestowed upon their breeding.

To accomplish this in some degree your committee beg leave respectfully to suggest that liberal premiums be offered by this association for the best exhibitions of these animals.

THOMAS CUMMINS.
JOHN MEEK.

REPORT ON POULTRY.

To the Royal Hawaiian Agricultural Society :

Much may be said in favor of an increased attention to "the breeding and rearing domestic poultry," says Main: "as one of the branches of rural economy it includes two special though different objects. The first is that of rearing poultry for amusement and for the table of the owner; and the second is doing the same thing with a view to profit." To accomplish either of these objects it is important that we have the best kinds of domestic fowls, as some are more prolific and hardy than others. We have on these islands but few varieties. We have a very small breed, which I call the native breed, short

legs, small bodies, and gives us small eggs. Then comes the Frizzled Fowl, which is supposed to be a native of Japan. Then we have a mixture of the Malay, though I cannot be certain of their having been a cock and hen introduced; the cock is a great fighter. Then we have the Cochin China fowl, and a noble fowl it is, and were it not so naked and tender during its young state, it would probably take the preference. As it is, by crossing with the Malay, we find it improves; but the chick is exposed to numerous accidents the first few months of its existence, being nearly naked, its body is exposed to the sharp bills of its more advanced friends, and it also feels every change of weather. It is also liable to some diseases peculiar to itself. Will not this society take special pains to introduce to these islands the Dorking fowl, from England or the United States, the golden top-knots, silver top-knots, and the black Poland top-knots; of the last of these fowls Mowbray says "that his five Poland hens in eleven months, laid five hundred and three eggs, on an average one ounce and five drachms, exclusive of the shells, making a total weight of 50½ pounds." I believe that by crossing these varieties we can obtain one to suit us.

Of Ducks I know of but two varieties, the Muscovy, and the common American, the latter a good layer, and a favorite with the natives, it seems to thrive well, and is increasing. There are several varieties which I hope the society will endeavor to introduce. The crested, or top-knot duck, the "red crested" from New Zealand, and above all let us have the canvass-back duck, if it has been domesticated.

Of Turkeys all I can say is that they are few, and very poor at Honolulu.

Will the society offer a premium for the best essay on poultry, in native and English; showing some of the advantages of an increased attention to this department of industry. Also a premium to some one for establishing a poultry yard on a large scale; eggs ought not to be six cents a piece, and poor ones at that.

I have already written more than I intended. The subject is an important one, and I hope will receive your earliest attention. I might enter into detail, and give statistics to show the importance of having good varieties, and plenty of them, but I will only refer the Society to the excellent address of Hon. Mr. Severance.

Respectfully submitted.

E. H. ROGERS

REPORT ON TREES AND GRASSES.

To the Chairman of the committee on Trees and Grasses :

SIR.—Though it is not in my power to do as much as I could wish for furthering the objects of this society yet I feel a deep interest in its success. And I may say I have a special interest in that part of the subject to which I have been appointed.

I regret that I am not able to attend the meeting of the society, but as I cannot do that I take the only method left me of contributing to its advancement.

Trees are always striking objects in a landscape, coming next to mountains and rivers in interest to the eye of the admirers of nature. We who are dwellers on these sunny shores, regret nothing more of all the inanimate objects we left behind than the stately forest the shady avenue, the luxuriant ornamental, or the delicious fruit tree. They are among our earliest associations and still their memory haunts us as a pleasing dream of things passed away. We cannot forget them, nor cease to feel the sad want of them in this land of our adoption.

But few such pleasant groves yet exist here, as no doubt may and will be found hereafter, but these few add to our regrets that they are not more abundant.

It is a well established fact that rains are more frequent and copious where trees abound, than where they are wanting. In America what were in some cases large streams while the country was covered with forests, have now become small streams flowing only in the winter. Some of them it is said might even merit the appellation of rivers formerly that are now nearly extinct. The evaporating surface of all the leaves of one tree is immense, consequently they must exert a great influence on the surrounding atmosphere.

Of the usefulness of trees as timber for a vast variety of purposes, and for fuel I need not speak. Every one must be convinced for himself. Bearing this in mind and also the very great scarcity of wood at these islands, it becomes a question of much importance ; what has been done to supply this deficiency, and what can be done ? The first question others can answer better than myself ; on the last I will make a few suggestions.

No doubt many efforts at cultivating trees have been unsuccessful

owing to lack of knowledge and experience in tropical cultivation. Those which have been successful have been in a measure lost to the community for want of a common centre of communication such as now exists in this society. Instead of recording the results of experiments each one has contented himself with communicating to his immediate circle of friends, or an occasional visiter, such results to be improved by a few or forgotten altogether. Our present course will be to compare together the experience of all, and thence derive principles which may be of use to all.

Being absent I can only communicate the results of my own experiments, and observations on a few such objects as come within the range of my department. In so doing I wish to be understood in most cases as suggesting what may be fact, than as stating positive fact, the experience of one being insufficient in my opinion to decide upon such facts. I will proceed, without much order, to enumerate and remark.

THE FIG TREE.—There are at the islands four varieties of this tree, viz :—the Bush fig, the Tree fig, the Turkey fig, and the China fig. So far as I know, they all bear well. In some places they do not shed their leayes with sufficient uniformity to produce a full crop at once. They may therefore in those places be made to bear at different times by stripping off their leaves at different times. It is only however during their proper season of bearing that they will produce good fruit, but they may no doubt be made to bear through the season by proper management. But where the leaves all fall at once it would be difficult to vary the season of bearing.

They require a rich soil and should be watered frequently in dry places. Their roots are very branching and will soon exhaust a soil in their vicinity, consequently very little else can be raised near them. The roots will often be found diseased or injured by insects, and it is a desideratum to find a remedy. I would remark, however, that this is not the case where they are frequently flooded with water. The same remark applies to the peach tree. The bush fig bears small insipid fruit and is only valuable for being in season after the season of the tree fig is over. Of the merits of the China fig, or its fruit, I know nothing. I should consider the Turkey fig as the most valuable of all kinds, as the fig is large and abundant, while the stock itself is pro-

portionally very small,—a mere shrub—whereas the tree fig is smaller and grows on a large tree which makes heavy drafts on the soil.

Of the flavor of the Turkey fig I am not sufficiently acquainted to judge.

The fig is easily propagated by cuttings in the months of January and February.

THE GUAVA.—This tree is valuable not only for the abundance and usefulness of its fruit, but it affords excellent fuel. It is easily raised from the seed, and will grow in almost any soil with proper care, but the richer the soil the greater the quantity of fruit it will produce.

There are many varieties of guavas, the principal of which are, the sour guava, the sweet white guava, and the red-fleshed guava. The last is most common, and the best, if but one can be had. It grows on a mere shrub, while the white guava grows on a tree in some situations 40 or 50 feet high. The fruit of the latter has a mawkish taste, but the hybrid produced between this and the sour guava is delicious, being about the right temper.

The production of these hybrids should command more attention than it has received, as it is easily managed, and we have all desirable extremes to commence with, as the sweet is very sweet, and the sour is very sour. Their rich foliage render them a not undesirable inmate of the garden or pleasure grounds, and with proper culture the value of the fruit would be greatly increased.

THE MANDRAKE.—This is often called a guava, and perhaps not improperly so, as tree, flower, leaf and fruit partake of the general character of the guava. But in beauty this tree far exceeds the guava, which is low and weak, with branching limbs, whereas the mandrake towers aloft with upright branches, and its dense foliage is a bright glossy green. It is not easily propagated, as the seeds will not often germinate unless they are kept at a uniform moisture in a very loose soil, near the surface.

But I am persuaded that when this tree is better known very many of the trees now cultivated for ornament will be dispensed with, for in addition to its fine shade and appearance, the mandrake bears an abundance of most delicious fruit, than which none produce a finer jelly. This tree might no doubt be made to produce a valuable hybrid with the guava. It appears to do best in a moist situation.

THE ORANGE, LEMON, CITRON, LIME, &c.—Having little experience in the culture of these trees I can only say of them that, at the islands they all require shade, else they are soon covered with lichen, and either perish or cease to thrive. With much pains taking this may be washed off with soap and water, and they will thrive. But either a cloudy situation, or the vicinity of a mountain or high rock, or the shade of a tree seems necessary to their prosperity.

It is said they are a native of the forests of Persia rather growing in the shade of other trees than forming one of their own.

THE COCOANUT.—What I would say of this tree must have suggested itself to every one, viz :—why is it not more abundant at these islands, as it grows freely where little else valuable will grow, and is so very useful ? What a vast amount of fencing stuff it would furnish. Every part of the tree seems to be useful. And I need not add how greatly it would improve the sandy plains along the sea shore if they were covered over with this tree.

THE MANGO.—Of this tree I know little, but have been told that it requires a moist situation well sheltered from the wind, and an abundance of vegetable matter in the soil.

CUSTARD APPLE OR CHIRIMOYA.—This most delicious fruit can be raised successfully, by a plentiful application of ashes and coal dust, with a portion of other manures. Ashes seem essential to its growth and the production of its fruit. It grows freely from the seed.

THE TAMARIND.—This will grow in almost any situation and is always a beautiful tree. It does not always bear fruit, but in certain locations it bears abundantly. What those peculiar locations are I am not certain, but I have seen it loaded with fruit in a sandy plain near the sea, and in a dry warm situation inland. It was irrigated in the latter situation. The wood is tough, and would probably be valuable as timber, certainly it would for fuel.

ORIENTAL LILAC OR PRIDE OF INDIA.—There are two varieties of this beautiful tree at the islands. One grows to a very majestic tree, and is long lived, the other is but a small tree or shrub, and is very short-lived. They bear abundance of seeds from which it may easily be propagated, and in addition to their beautiful foliage, will furnish abundance of fuel, and perhaps the large tree may be valuable as timber.

They are of very rapid growth, but are ill-shaped where they are exposed to the wind. They yield a gum which may be substituted for gum Arabic, though it is somewhat bitter.

THE PEACH.—Contrary to some of our pre-conceived ideas, it appears that this tree will flourish along with the orange, pomegranate, fig, and even in those hotter regions where only spices grow in perfection. The tree seems to grow with great vigor here in various situations. Unfortunately it is very difficult to raise it from the seed, and that is no doubt the reason why it is not more plenty. It is, perhaps, not generally known that it grows freely from the slip. An experiment which I made with budding succeeded admirably. The kind now grown here is a very meagre one, and it is very desirable that the finer kinds be introduced, and that the lovers of this delicious fruit be no longer debarred the enjoyment of what I am persuaded may be raised here in the highest perfection.

As above stated, the tree can be entirely protected from the ravages of the borer by growing it where it can be frequently flooded.

The various species of Acacia and Mimosa grow freely, and in addition to their ornamental qualities produce good fuel.

Two species of Agati grow freely from seed and produce abundance of large showy flowers but are short lived.

APPLE TREES will grow, but it requires further experiment on some of our mountains, to decide whether they will produce fruit. The same is true of the QUINCE.

Whether PLUM AND CHERRY trees have yet been grown I am not able to say, but hope the day is not distant when a fair experiment will be made.

Of native forest trees I am not able to say much. Some of them may be raised in proper situations with great ease, and are beautiful trees. Large tracts now lying waste may be speedily covered with forests by being protected from fires and cattle.

But I must close. I had intended to say much more, but want of time renders it impossible.

What I have written has been done in great haste, but I hope the will may be taken for the deed.

Very truly yours,

E. BAILEY.

REPORT ON DOMESTIC PRODUCTS.

BY CHARLES R. BISHOP.

Honolulu, August 9th, 1851.

STEPHEN REYNOLDS, ESQ.,

Chairman of the committee on Domestic Produce.

DEAR SIR.—As the time for the annual meeting of the "Royal Hawaiian Agricultural Society" has nearly arrived, and as it is my duty, as one of the committee above named, to place in your hands what facts I have relating to the domestic produce of the islands, I beg leave to send herewith, a table of domestic exports as cargo, for one year, commencing July 1st, 1850, made up from the outward manifests and the reports of the collectors of customs at the various ports (except Kawaihae). Probably the table is not entirely correct, but it is as nearly so as I am able to make it, from the data in my possession ? and it will serve as a basis of comparison for the future. I enclose also a copy of the "Polynesian,"* which contains a table of exports for the year 1850.

I am unable to state what amount or value of produce has been furnished to ships, as supplies, though it must be about the same as last year, as the number of vessels which have visited the two principal ports, (Honolulu and Lahaina) during the first half of this year, is about the same as during the same period last year.

You are aware of course, that of the principal products of the islands, there is more consumed than is raised upon the island of Oahu.

The accompanying tables, &c, are most respectfully submitted, with the hope, that the other members of the committee will furnish you with much more valuable and interesting facts.

Very Respectfully,

Your obd't servant,

CHAS. R. BISHOP.

* See Polynesian, February 1, 1851.

EXPORTS OF DOMESTIC PRODUCE FROM THE VARIOUS PORTS OF THE HAWAIIAN ISLANDS (EXCEPT KAWAIHAE ON HAWAII,) FROM JULY 1, 1850, TO JUNE 30, 1851, INCLUSIVE.

FROM HONOLULU, OAHU.

Sugar	228,865 lbs.	Bananas	154 bchs.
Molasses	23,477 gal.	Limes	10 M.
Syrup	18,517 do.	Oranges	18 "
Coffee	114,252 lbs.	Melons	950
Salt	5,182½ bls.	Squashes	2344
Beef	10 do.	Cocoa Mats	119
Hides	1,319	Rope	332
Tallow	8,291 lbs.	Wardrobe	1
Goat skins	26,519	Furniture	2 tables.
Irish potatoes	3,169 bls.	Mules	1
Sweet potatoes	1,217½ "	Swine	23
Onions	481 "	Goats	10
Arrow-Root	13,104 lbs.	Turkeys	34
Hay	10¼ tons	Fowls	160
Wood	4 cords.	Brooms	399 2-12 doz.
Mustard seed	786 lbs.	Value $89,255 36	

LAHAINA (FOR THE ISLAND OF MAUI,)

Sugar	64,154 lbs.	Squashes	47,204
Molasses	6,409 gal.	Beans	64 bls.
Syrup	75,511 "	Corn	5 "
Coffee	14,103 lbs.	Pickles	64 "
Salt	100 bls.	Preserves	212 gals.
Irish potatoes	68,777 "	Vinegar	268 do.
Sweet potatoes	5,079 "	Cabbages	1600
Onions	2,564½ "	Swine	331
Arrow-Root	3,676 lbs.	Sheep	15
Bananas	50 bchs.	Goats	5
Oranges	116 M.	Fowls	120 2-12 doz.
Melons	6806	Lime juice	304 gals.
Pine-Apples	14 3-10 M.	Butter	157 lbs.
Cocoa Nuts	4,350	Value $266,718 14	

FROM WAIMEA, ISLAND OF KAUAI, AND THE ISLAND OF NIIHAU, PART MANIFESTED AT WAIMEA AND PART AT HONOLULU.

Sweet potatoes	3009 bls.	Oranges	4 M.
Yams	9 "	Squashes	100
Onions	568½ "	Cattle	4
Sugar	5000 lbs.	Sheep	108
Salt	50 bls.	Swine	110
Pine Apples	2 M.	Turkeys	110
Bananas	20 bchs.	Fowls	1202
Cocoa Nuts	1400	Ducks	12
Dried Pork	1200 lbs.	Value $9,030 62.	

FROM HANALEI, KAUAI, MANIFESTED AT HONOLULU.

Coffee	21,298 lbs.	"Penelope" and "Alice Tarleton."
Irish potatoes	39 bls.	do.
Cattle	20	"Lightning."
	Value $2744 08	

FROM KOLOA, KAUAI, MANIFESTED AT HONOLULU.

Sugar	26,023 lbs.	Cattle	50
Molasses	2,851 gals.	Swine	130
Syrup	353 do.	Goats	1
Sweet Potatoes	360 bls.	Turkeys	542
Yams	40 do.	Fowls	1017
Onions	75 do.	Value $6,631 94	
Squashes	1000		

FROM KEALAKEAKUA, HAWAII.

Sweet Potatoes	1122 bls.	Squashes	1050
Yams	40 "	Swine	27
Coffee	300 lbs.	Goats	20
Oranges	5 6-10 M.	Fowls	300
Cocoa Nuts	600	Value $2,059 97	
Bananas	21 bchs.		

FROM HILO, HAWAII.

Sweet potatoes	50 bls.	Swine	75
Onions	70 bls.	Fowls	500
Pine Apples	5 M.	Turkeys	75
Squashes	75	Value $950	

TOTAL EXPORTS, AND VALUE.

Sugar	324,042 lbs.	Furniture	2 tables
Molasses	32,737 gals.	Mules	1
Syrup,	94,381 "	Swine	696
Coffee	150,583 lbs.	Goats	36
Salt	5332½ bls.	Turkeys	761
Beef	10 do.	Fowls	375 doz.
Hides	1319	Ducks	1 doz.
Tallow	8291 lbs.	Pine Apples	21 3-10 M.
Goat skins	26,519	Cocoa Nuts	6350
Irish potatoes	71,985 bls.	Brooms	399 2-12 doz.
Sweet Potatoes	10,837½ do.	Beans	64 bls.
Onions	3,759 do.	Corn	5 do
Arrow-Root	16,780 lbs.	Dried Pork	1200 lbs.
Hay	10¼ tons.	Pickles	64 bls.
Wood	4 cords.	Vinegar	268 gal.
Mustard seed	786 lbs.	Butter	157 lbs.
Bananas	245 bchs.	Cabbages	1600 do.
Limes	10 M.	Lime juice	304 gals.
Oranges	143 6-10 do.	Preserves	212 do
Melons	7756	Yams	89 bls.
Squashes	51,769	Cattle	74
Cocoa Mats	119	Sheep	123
Rope	332 lbs.	Value $377,390 11.	
Wardrobe	1		

REPORT ON ROADS.

Puukapu, Hawaii, August 3d, 1851.

T. METCALF, Esq.

As a member of the committee of the R. H. Agricultural Society, on roads, harbors, and inter-island navigation, of which you are chairman, I beg, through you, to urge upon the society the propriety and urgent necessity of doing all in their power to promote the introduction of one or more steam vessels, as coasters among these Hawaiian Islands.

The delay and inconvenience to persons engaged in business, whose time is valuable, arising from the want of a speedier and more regular mode of inter-island communication, than that afforded by the heterogeneous fleet of sailing coasters, is well known and has been frequently experienced by many of the members of the Agricultural society. Do not some of them, yourself among the rest, look back with feelings the reverse of agreeable, on a three days calm to the south west of Lanai, or off Waianae, or to crossing the Hawaii or Molokai Channels in a dirty, thirty-ton schooner in rough weather, when they could not show their noses over the weather rail, and when it seemed doubtful at times whether they should ever reach Honolulu; or have none of them ever received letters two months old, which with proper means of communication they ought to have received in two days from the time they were written?

The importance of this subject was recognized by the society at its last annual meeting, as I perceive by the fourth resolution, passed August 14th, and it is to be hoped that additional light will be afforded this year, as to the probable expense of running a good and sufficient steamer round the islands. Nothing short of a large and substantial sea-going vessel, will answer the purpose. A small boat, or a river boat will never be safe to cross our rugged channels in. It will require a boat with plenty of deck room, for the purpose of transporting horses, cattle, sheep, hogs, &c., without inconveniencing passengers, in order to make the business profitable. And profitable, I will venture to say, it will be, after it is fairly tried. Passengers would cheerfully pay double fare in a steamer, on account of her superior speed and accommodations, and the foreign part of the population, who pay

most for their passages, would travel at least twice as much as they now do, between the islands.

A steamboat would get nearly all the light freight to carry, and there are many things that would be raised on the other islands, for the Oahu market, if a preper mode of conveyance were once established.

A steamer might leave Honolulu every Monday morning, and arrive at Lahaina, touching at Molokai, the same evening; leave Lahaina on Tuesday morning and arrive at Hilo the same evening, touching at Honuaula and Kohala; leave Hilo on Wednesday and arrive at Kealakeakua the same evening, touching at some place in Kau, say Kailikii, leave Kealakeakua on Thursday morning, and reach Lahaina the same night, touching at Kailua, Kawaihae and Honuaula or Kalepolepo; leave Lahaina on Friday evening and arrive in Honolulu early on Saturday morning. This of course excludes the island of Kauai, but if the depot for the steamer were situated either at Hilo, or at some port on Kauai, the whole circuit of the islands could be made between Monday morning and Saturday night. This could certainly be effected by running in the night time.

There is one thing which ought to be remembered in calculating the probable expense of maintaining a steamer round the islands, and that is, the great saving of fuel which can be effected in the down passage, in four out of five voyages by sailing before the trade-winds.

In reference to roads and harbors I have little to say. These subjects in your hands, will not be forgotten. The roads generally received the earnest attention of the last Legislature, and will doubtless be gradually improved throughout the kingdom. There are some districts, the coasts of which I think ought to be minutely surveyed, for new harbors or landing places. Hamakua, Hawaii, is one of those districts. It is a beautiful tract of land, and would make a fine agricultural country, but it possesses no harbor. There are said to be several places along its shores where landing places might be made. And here is an instance of the benefit to be derived from steam coasters. A steamer could call at such places, and land or take off freight and passengers, when a sailing vessel could do nothing. The government owns a great deal of unoccupied land in Hamakua, which can never be extensively cultivated until some place of shipment is provided for planters in the district. When this is done we may expect to

see the beautiful slope of that portion of Hawaii covered with flourishing sugar plantations.

Yours respectfully,

G. M. ROBERTSON.

REPORT OF THE COMMITTEE ON LABOR.

The subject of labor is that, above all others, of the most vital importance to the Agriculturists of this nation. It is, in fact, the great question, upon the satisfactory solution of which, their success, their progress, their very existence depends. Its importance is increased by the fact that from our isolated position, and our want of the necessary capital, we are unable in a great measure to avail ourselves of the various labor saving inventions that are constantly being brought into use by our countrymen at home.

STEAM.—That great auxiliary to, and substitute for, the labor of human hands, which is now lending its giant aid, not only to the mechanic and the manufacturer, but also to the planter and the farmer, is as yet unknown among us. Not a steam engine is to be found upon these islands, and even the occasional visits of the "moku ahi," or fire-vessel, are yet hailed with wonder and admiration by the natives, and as "remarkable events" by the foreign class of our population. Doubtless this mighty agent will ere long be introduced and put in successful operation, but the present obstacles, the lack of capital, the want of machine shops, difficulty of obtaining engineers, and the scarcity of fuel, appear so formidable that no one as yet has the courage to face them.

This great obstacle, the scarcity of labor, was the great question which stared us in the face, at the outset of our organization as a society. Many of us who met together last year to devise means by our association to encourage and aid each other in our labors, came up to the meeting from coffee and canefields which were overgrown with weeds and run to waste before our eyes, only from the utter impossi-

bility of obtaining labor at any price within the bounds of reason, to save our plantations from ruin. This question engaged our minds and time, and various means for obtaining the desired end were discussed by the society. The importation of coolies from China appeared the most feasible of these means, from our proximity to that country and the readiness with which laborers could be obtained from its redundant population. Your committee were chosen by the society to carry their views into effect, and they lost no time in endeavoring to do so. That the result of their efforts has been so unfortunate a failure, cannot be too deeply deplored, but your committee feel that the failure of the attempt is not in any way attributable to mismanagement on their part. The measures taken by your committee were so taken with the concurrence of the members of the society who were interested in the matter. And this is the history of the matter.

A contract was entered into in the month of Sept. 1850, with G. F. Hubertson, Esq., a merchant recently established here, (who had resided in China, and was supposed to be by far the best person with whom to make the contract, from his experience in the matter, and his facilities,) for the importation of two hundred Chinese coolies. The charge for passage for each coolie was fifty dollars, which with the advances to be made to each, on shipping them, and a years' supply of rice for consumption here, made the sum about $71 that each coolie would cost delivered here, of which two month's advance wages formed a part. The men were to be engaged for five years. To secure dispatch in this matter between nine and ten thousand dollars, or nearly two thirds of the whole amount was advanced to Mr. Hubertson to meet the ship's disbursements in China and the necessary expenses of shipping the coolies. The ship Amazon, belonging to Mr. Hubertson, sailed on the ————, and your committee believed that a successful commencement had been made of the great work of supplying the islands with laborers, whose brawny arms should lay open to them the wealth now buried in its soil. But we were sadly disappointed. The Amazon arrived in China, and the coolies, we learn were engaged, but after waiting in vain for her return with the much needed freight, a rumor has reached us that the vessel has been sold and the voyage abandoned. The reasons for this disastrous result have not been made known to us, and in the absence of Mr. Hubertson we must probably for the present remain in ignorance of them.

Arrangements have since been made by members of this society to procure coolies, with Capt. John Cass of Ship Thetis, which vessel sailed yesterday for Amoy, for that purpose. This new enterprise your committee believe will be successful, and that we shall soon be able to try an experiment, the success of which will remove the grand obstacle to our agricultural progress and success.

All which is respectfully submitted.

J. F. B. MARSHALL, *Chairman.*

Honolulu, Aug. 13th, 1851.

To STEPHEN REYNOLDS, ESQ.

REPORT ON SEASONS--HAWAIIAN SEASONS.

The seasons for agricultural purposes, so far as kalo and sweet potatoes and melons are concerned, are probably as well understood by intelligent natives at the present time as they ever will be. But the cultivation of almost every recently imported plant is as yet a matter of experiment, and must require experiments not a few to bring out satisfactory results that shall decide the proper time for planting the same. So that your committee in their present report only expect to throw out suggestions and make statements such as are the result of the few observations and enquiries which they have been able to make.

Messrs. Green of Makawao, Bond of Kohala, and Smith of Koloa have each furnished me with observations and remarks which will be used freely in this report.

As to the importance of our subject; we would remark that many disappointments have already been experienced by those who have attempted to cultivate the soil at these islands, from the fact that they put their seed into the ground at the wrong time. The resident on the hills of New England watches the opening spring, the dissolving snow, the swelling bud, the opening leaf and flower, to indicate the season when to plant and sow his seed. But such indications of seed time are here unknown. The mildews and frosts and snows so fearful

to the northern planter are never experienced between the tropics, and the New Englander naturally concludes that on the windward sides of our islands, and on the high table lands, where there is plenty of rain the year round, all the agriculturist has to do is to plant and sow and gather in his crops irrespective of times or seasons. The idea also is common among new comers into these islands, that where irrigation can be practised no regard need be paid to the season.

But such, your committee think, will be found, to a great extent, the result of mistaken notions ; as it has repeatedly been the occasion of sad disappointments.

Solomon the most scientific herbarian of ancient times says: "To every thing there is a season, and a time for every purpose under the sun." With whatever latitude or restriction this passage of Sacred Writ may be interpreted in morals, every practical cultivator of the soil at these islands, will we think, agree that it has an unmistakeable meaning in Agriculture. Every plant, to be brought to its highest perfection, must be indulged in a greater or less degree of conformity to its season.

Our next enquiry is :—What constitutes a Hawaiian season ?

The general division into wet and dry months furnishes one important clue to Hawaiian seasons. The rainy months in the islands generally are from October to April, seven in number. Although frequently little or no rain falls either in October, November, or April. The wet season varies somewhat in different years and in different islands, but not generally very much.

But the time for planting the same articles in different soils, and different localities varies somewhat widely. And in respect to these planting seasons is the main field for enquiry before us.

Not only is the rainy season to be consulted, but the natural moisture of the soil, its elevation, its position on a northern or southern slope of a hill, especially the side of a pali. Many crops may be delayed a month or two in places where irrigation can be practiced. On the windward coasts, especially near the sea, the seasons of high surf, when the salt spray sweeps over the coast with the power of a destructive frost, must be consulted and avoided. During that season corn, beans, potatoes, &c., if planted in exposed situations are sure of

destruction. In many places the season for the caterpillar and the grub-worm must be consulted. Natives on Oahu rarely think of planting potatoes, corn, beans, &c., until the season for those vermin has passed.

But to make ourselves better understood we will give our views of the time most suitable for the planting of different kinds of articles in different kinds of soil.

1st. INDIAN CORN.—In a dry soil, that cannot be irrigated, let this article be planted as soon after the commencement of the rains as may be, yet not earlier than November. It will then be out of the way of the caterpillar and grub, and will be likely to ripen well in the early part of the dry season. If planted before November or December, it may suffer from ripening in the rainy months. In a wet soil or on the northern slope of a mountain or pali, or in situations where the crop can be irrigated if need be, just before it is ripe, it may be well to delay planting corn till after the season for the caterpillar has gone past. December and January are the months in which these vermin are generally most destructive to plants.

The above remarks will apply to melons and squashes as well as to corn.

Corn or melons planted in a damp soil or in cloudy situations in the month of October or November will not do well. A field thus planted by Mr. Gulick, in Kamananui, Waialua, the past year, both of corn and melons grew beautifully till about the time for fruit to appear, when the corn shot forth very meagre ears, and did not fill out very well; a very ordinary crop was realized. The melons were of poor flavor, and less profitable than if planted later.

On East Maui, Makawao and Hamakua, corn does well, if planted as late as March or April; owing doubtless to the damp and cloudy situation of those places, while at Kaupo, on the opposite side of the mountain, planting time should be at least two months earlier, or the crops will dry up before they ripen.

Wheat generally does best if planted at the same time that suits the corn crop. It will not stand drouth as well as corn, and as its period for coming to perfection is about three months, i. e., one month less than corn, it escapes that evil if planted at the same time, which suits the corn crop.

IRISH POTATOES.—For these, it is said there are two seasons on East Maui, the fall and spring. But doubtless the time for planting is regulated more by the desire of the planter to suit his crop to the shipping season than by the nature of the plant itself.

On Oahu and Kauai the results of several experiments go to show that the Irish potato yields the best crop, if planted soon after the setting in of the rainy season or the early fall rains.

This crop may be raised on all the islands if the right soil and season are sought for the purpose, and suitable pains taken in the cultivation.

The sweet potato has been rarely cultivated advantageously at the islands, by foreigners. It has its seasons, and requires a suitable soil and appropriate cultivation. Many a field has been planted, without any returns to the planter. The field was planted too late, or too early; it was irrigated too much or too little; the earth was left hard and baked around the roots of the plant; or the field was suffered to run to vines only.

All of these points must be understood by the man interested in the crop, or a failure may be expected. But to be more particular. We know of no place where it is suitable to plant the sweet potato in June, July or August. Indeed we know of nothing that can profitably be planted in those three months except sugar cane.

On light plain land the sweet potato may ordinarily be planted soon after the commencement of the fall rains, but where irrigation can be practiced, a delay of one, two or three months may be well.

On the north side of a deep ravine the potato is planted early; on the south side it is planted by the natives two or three months later, say in February or March.

The sweet potato does best on a light porous soil. On a clayey soil which bakes and cracks, the potato on Oahu becomes what the natives call pakika, a disease which, so far as I know, has no name in English; but the disease, if existing in the cooked potato, is easily detected when on the table, both from its offensive smell and taste. This disease which it would be well for some scientific man to investigate, is said to have had no existence on the island of Hawaii fifteen or sixteen years since. The natives attribute it to the influence of a fly upon the potato.

Garden vegetables, such as beets carrots, turnips and parsnips, are rarely raised in the islands. So far as attempts have been made to raise them, the failure has been so general in consequence of the grub worm, that I know of but few who have succeeded to any extent. Mr. Greene of Makawao says: "As for garden vegetables I can not raise them, for the Pelua or grub-worm destroys them. Onions will do nothing. I am almost discouraged with attempts at these articles."

The onion however does remarkably well in many places, and with less cultivation than is requisite in the United States of America yields a crop. The onion is not generally raised from the seed, and for economy's sake it may be best to plant it twice during the season, first about October again, in January. The native onion planted in October naturally divides itself up into six or eight independent plants so that what covered one rod of land in October, may be replanted in January on six or eight rods.

The grub worm is said often to destroy this plant on elevated situations such as Makawao and Kohala. But I am not aware of such an evil on low lands near the sea.

Pea Nuts do well in the islands, require a rich, dry, mellow soil. Should be planted in October or November, if the fall rains have commenced. If the soil in which they are planted is moist the year round, they will grow on and continue to put forth fresh nuts, till matted together, and the whole is taken by the rats. Hence the importance of a dry soil that they may ripen together.

Sugar Cane.—This article which insects can harm but little, will grow, if planted at any season of the year, and on almost any part of all the islands, where it can obtain a sufficient amount of moisture. The most profitable season however for planting it in all the low lands is said to be from May to August. The earlier, probably the better, as the tops for planting can then be obtained at the least amount of loss to the crop on the land from which they are taken. A favorable circumstance this, that when almost nothing else can be planted the sugar cane may be.

Fruit Seasons.—Early in the fall is the best time for planting the fig. It then has a long moist season before it in which the slip will take root, and in favorable circumstances grow with great rapidity. The sap of the tree is at this season generally down, and the woody

fibre is solid, and in good condition to grow. The fig will yield a large and profitable crop, if well cultivated and planted in a good soil; and from some experience in cultivating it I am led to believe that to lighten up and enrich the soil around the roots of the tree is more important than any protection that shade trees can give it. Indeed two of the most productive trees I have seen in the islands stood unprotected and alone, on the windward side of this island, having no other roots intermingling with theirs. To be fruitful it should not be allowed too many branches, and no young shoots from the root.

But of fruit trees, generally, your committee are not prepared to speak.

In considering the subject of seasons we shall not have discharged our duty unless we speak of the caterpillar and grub-worm season. The caterpillar generally makes its appearance in December or January and continues for a month or more. They are legions—so numerous as to cover the ground for hundreds of acres together, thicker than the farmer sows his wheat, and so voracious as to leave no green thing behind that suits their taste.

The natives rarely think of planting anything but kalo in lands infested by the caterpillar till his season has passed.

His appearance may be confidently expected in from 6 to 10 days after the second soaking rain in the fall or winter.

The grub worm commences his work about the same time with the caterpillar, but is more concealed in his work and will hardly notify you of his operations till you find your field partially mowed over by an unseen enemy. The grub works mostly in the night, and lives underground during the day; while the caterpillar remains exposed upon the tops of the grass or plants he is devouring. Of the two the grub worm is more to be feared than the caterpillar; he continues his work much the longest.

Every judicious agriculturist, will make enquiries in relation to these vermin, their time of appearance, &c., on the soil he intends to cultivate.

If no means can be found to prevent their ravages, they will always be a great impediment to many kinds of agriculture. Soaking the seed to be planted in tobacco juice is stated in some New England

paper to be an infallible preventative of the incursions of the grub-worms. I hope this is true, if so, we shall have found at least one good use for tobacco, and one strong motive for raising it in this country, which is probably as well adapted to its growth as any land on earth.

The grub-worm has in some places been at least greatly diminished by plowing and re-plowing the land to be planted and allowing domestic fowls to live upon it when newly turned by the plow. As to losses sustained by the grub-worm. I am informed by Mr. Bond of Kohala that one native, Naihe, entirely lost a crop of onions, by the grub, which if brought to maturity would have been worth ten thousand dollars.

A field of from one to three or four acres of corn has the past season been planted, and replanted a second or third time, and destroyed by the grub. Any means of destroying this insect that would prove effectual would be of great service.

One other topic claims our attention at this time, viz :—

The season of KAIKO or HIGH SURF. On the windward side of the islands there are certain periods in the fall or winter when there is a high surf connected with a north or north-west wind. At such times a salt spray spreads over the adjacent shore, and in the distance, often resembles a New England fog.

This salt spray is ruinous to many, perhaps most vegetables that may be exposed to it. Corn, wheat, beans, peas, potatoes of all kinds, beets, carrots, parsnips, &c., wither before it as if cut down by New England frost. Even the leaves of the tamarind fall as if smitten by a November blast in New England.

Natives are cautious of planting in places exposed to the Kaiko until the season for its violence has passed.

The kalo root and banana are supposed to have no season but may be planted with equal advantage at any time, in case the soil be sufficiently moist. But of this opinion I stand in doubt.

Natives say that in the months of May, June and July, at which times the kalo is in blossom, it can not be planted with equal profit as in other months as the yield will be much less. The young kalo, that shoot from the parent stock will be less numerous and the crop altogether inferior. This I am inclined to think correct, although I am alone in the committee on the point.

I am not aware of any season when the banana may not be planted with profit. Although a field planted so as to ripen in March or April will be more likely to be lost in the winds and rains of the two preceding months, than if planted at a later or earlier period.

In behalf of the Committee on Seasons,

J. S. EMERSON.

To the Royal Hawaiian Agricultural Society :

GENTLEMEN.—Having yesterday become a life member of your society, and am happy to say much pleased with its proceedings, I take the liberty of addressing you, which liberty I did not consider myself justified in taking, situated as I have been heretofore, unless I would have prepared documents, treating on some of the most leading principles of the agriculture and manufacture of sugar, which from my constant application to this business, and experience on these islands, I think would have proved satisfactory to all ; however as this has not been done, I live in hopes to be able at the next annual meeting to produce some still more valuable statistics relating to facts that have come under my immediate notice, on these islands, and compare them with other places, as our great end is to know what really can be done here, and not preach up what is done in other parts of the world, without giving some satisfactory comparison to our present adopted place of residence.

As little or nothing has been said yet on the subject of employing and economizing manual labor, I cannot let this opportunity pass, without making a few remarks on the subject, as I consider it one of the most vital importance to the agriculturist, and the future welfare of these islands in general and also that we cannot be too prompt in adopting some method for the revisal of the present system of employing native and all other laborers, which is in my opinion an erroneous one. In the first place the boy, the cripple, and the aged man are hired by the year as efficient laborers, in every respect, whereas

their services are not worth much more than two-thirds of that of an able bodied man; another thing, the natives' policy, or any other laboring class of men that we can get here, is to do as little as possible, for they get the same rate of wages for doing little as if they did much, and we have no legal method conveniently within our reach at present to exact a just day's work; there are a few natives that have a little more energy than others, and are wishful of doing what is right, but the majority are just the reverse, consequently they rule. My system is to pay a man according to his intrinsic value, and to accomplish this his Majesty's government, and the Royal Hawaiian Agricultural Society must take it in hand, and adopt, if they think fit, the following humble suggestions. In the first place, a tariff of the different kinds of work must be established, the accomplishment of which can be effected in the following manner.

Say take six or more able-bodied men, that have been accustomed to work, and give them in charge of some competent planter, and let him work them for a certain time, at every different kind of work that is required on a sugar plantation, by these means we are able to see what a laborer here really can do. Then we can take the medium of the work performed in the given time of each work separate and establish it as a standard task, for a certain sum, and proclaim it a law. In this tariff the quality as well as the quantity of work to be performed must be specified, also the condition that the work was in at the time the labor was performed, whether much or little grass, wet or dry; whether the earth was hard or soft, so that in event the laborer does not, and will not, perform his work according to law, his wages for that work is withheld until he performs it faithfully, and if he is not satisfied with this treatment let him then apply to a justice of the peace for redress. By these means a laborer is justly paid according to his intrinsic value, he is also fully protected by this tariff as his employer cannot insist on him doing more work than the tariff proclaims, but at the same time the laborer is at liberty to do more work and receive extra pay for it if he is ambitious and willing to work. This plan of self interest encourages industry and enlivens a desire in the laborer to accomplish his task faithfully and as soon as possible, and if he is ambitious will endeavor to do more than one task, so as to enhance his daily wages. The present system encourages idleness and

fraud, for the laborer has no other object in view but to dwindle away time as easily as possible and evade if he can the vigilance of his overseer or driver, for his only aim is to get along as easily as possible.

Concerning the laborers employed about the manufacturing department I purpose paying them according to the stations they fill, for there are certain works about the manufactory that are more tedious and require more skill than others, consequently the men that fill these posts require a little more wages than the rest so as to make it an object for them to take an interest in their business and excite competition. The system of task work is not so well adapted to the mills that are worked by cattle, but I see no just reason for it not being applied to those mills that go by water or steam, and I feel confident that should this system be universally adopted that the agricultural community of these islands would be benefited at least from 30 to 40 per cent, which I can show from my experience here, for I have had charge of from 15 to 20 natives on East Maui plantations, for over five months, which natives I worked on both plans. In the first place I worked them at trashing canes by the day for over three weeks, from sunrise until sunset, with intervals for breakfast and dinner, I found that by doing my best, with the assistance of a native driver, I could not get more than 50 rods on a single row out of them. I then gave them a task of 75 rods, this task I told them that when they finished properly their work for that day was finished, and that they could go home; they went to work cheerfully and by three o'clock the able men had finished the task in a proper manner and I have not the slightest doubt that had I given them one hundred rods it would have been done in a similar way and about the same time for they wasted a great deal of time smoking &c. After I had finished the trashing we went to work digging a ditch fence, 4 feet wide at top, 3 feet deep and one foot wide at the bottom, with all the earth thrown on the off side so as to make a perpendicular dam. I worked the natives over a week on this job, by the day as before, and during that time did not accomplish more than 10 feet to a man per day. I then gave them a task of 16 feet which they finished at about 2 o'clock, a few days after I gave them another task of 22 feet, with a promise that I would not increase it a single foot more. They, after some little deliberation, went to work and

finished it by 4 o'clock each man, and then went to bathe in a beautiful pond which is situated in the large ravine adjoining the plantation, and so continued until they were taken away. This amusement of bathing and jumping from high cliffs into the water which the natives are passionately fond of, was the grand object in view to get the work finished in time so as to participate in this sport, for they got no more wages for doing double the quantity of work than if they had merely done the 10 feet ; therefore this shows that unless self interest, in some shape is brought to bear on these people, and in fact, on all other classes of laborers, a fair day's work cannot be got out of them, although there is in my opinion very nearly as much work in a native as there ever was in a negro, but we have no legal and efficient means at present adapted for getting it out of them. Another thing I must mention concerning these proceedings, that during the time I worked them by the day I had a great deal of difficulty in turning them out in the morning and after breakfast and dinner, for they did all in their power to waste time and avoid work, consequently my presence was indispensable, but when I adopted the plan of tasking I never had the necessity to go to the native house in the morning and after breakfast or dinner but they were at work long before I got to the spot where the work was going on, and my presence was not requisite until the latter end of the work to see that it was properly done, &c. Another thing, a native driver can take charge of a gang managed on this plan, for all that he has to do is to see and keep them straight during the day concerning the quality of the work, &c., and then let a foreigner visit him at the latter end of the day to see that the work is really and efficiently performed. The plan of foreigners being with natives constantly, as a general thing, will not answer, for they cannot stand, in nine cases out of ten, the native's obstinacy, &c., without using violent means, and this does not answer in any case ; therefore, I propose having native drivers to be with the people constantly and make him responsible for the quality of the work, for without a driver in any case they cannot get along, then have one or two foreigners, if requisite to visit the gangs about the latter end of the work, to see that the driver had done his duty faithfully, and if not, to check his (and the ones in fault) wages, quietly, until it is finished as it ought to be, but never by any chance resort to harsh means. Now I do not see any just reason

for this system of task work not answering here as well as it has answered in Demerara and Berbice, for it is by these means we employ all agricultural laborers in those colonies. We were, after the emancipation of the slaves, precisely and in some respects worse off for labor than we are here, and we found from sheer experience that employing laborers by the day and working them as we had done in the time of slavery, with a driver behind a certain number of men for a given time, did not answer, consequently we were obliged to have recource to the above mentioned system which we found to answer a first rate purpose and is now universally adopted throughout the country. The laws concerning the binding of laborers for a given time answer an excellent purpose with one exception and that is if an employer ill uses a laborer he can, by applying to a justice of the peace, free himself from all further obligation, this in my opinion is an inducement for laborers to be refractory and more especially if they are dissatisfied with their employer or their bargain. The system that I would propose in this respect would be a heavy fine on the accused according to the nature of the case and not a total dismissal of the laborer.

A tariff regulating the field work in some respect on a sugar plantation, would not answer on a coffee estate or a grain farm, consquently it would be requisite to have a tariff established for each separate branch of business. Let the parties concerned in it interest themselves in it and moddel their tariff to suit circumstances. I have in my possession Sir James Carmichael Smith's Tariff of Work in British Guiana and would be most happy to give a copy to the planter that may have the regulating of a tariff here should my suggestions meet the approval of the Royal Hawaiian Agricultural Society.

I remain, gentlemen,

Yours most respectfully,

ROBERT J. HOLLINGSWORTH.

Honolulu, Oahu, August 14, 1851.

ON IMPLEMENTS.

To the Committee of The Royal Hawaiian Agricultural Society:

GENTLEMEN.—In answer to your inquiries on the subject of implements, I send you a few remarks. My experience in regard to ploughs is but limited, as I have used but two kinds: the Eagle plough and the self-sharpener; both of the largest size, are the best for breaking up new land on East Maui; in my opinion they are the best plough that has been imported.

Each plantation requires two or more large ploughs, and two horse ploughs of different sizes.

Harrows can be made here cheaper than they can be imported. Cultivators must be imported; it would be well to import a quantity of extra teeth, as the cultivator teeth are frequently lost.

Hoes here require a lighter and stronger article than any I have seen. The Carolina hoes are not strong enough for the land here in the hands of the natives, it wants a short strong hoe.

Carts had better be imported, as there is no good wood to make carts in this place. There is one objection to the imported carts, they are too narrow and the wheels too high easily to be upset by the native drivers.

Yokes and chains must be imported, also mills for grinding sugar cane, and kettles &c., for manufacturing sugar.

Butter could be made on some of these islands to pay a good profit by persons that understand the business.

Farming implements cannot be manufactured at this place, as a general thing they must be imported. To get them at the lowest price we can, I think it would be best to box them in the smallest possible compass they can be put up in; it will save freight, as any man that knows any thing about farming can put a plough together or handle his hoe.

The natives in general like the hoe better than the old Oo, excepting in the cultivation of the sweet potato, the hoe does not suit on account of cutting the roots.

There is one thing that has not come in practice among the sugar plantations, that is the subsoil plough. I think it would be a great improvement to the East Maui sugar cane lands.

When ploughs are imported it would be well to have a quantity of spare points for the different sized ploughs; the points are always breaking and good ploughs are thrown away for want of them.

Very respectfully, yours,

E. MINER.

Lilikoi, July 22, 1851.

COMMUNICATED BY BARON DE THIERRY.

The Hon. Mr. Severance, in his admirable lecture of yesterday evening, commented on the advantages which might result from the introduction into these islands of the *Phormium Tenax*, or native flax of New Zealand. The knowledge that such an attempt must be followed by disappointment, induces me to take the liberty of offering a few remarks, which, I am convinced, his anxiety for the good of these interesting regions will induce him to forgive. These remarks are founded on the experience of many years, attended by much labor and expense, which terminated in my being awakened from a dream in which I, in common with many others, had long indulged, as to the magnitude of the importance of that too celebrated plant. In attempts to work the *Phormium Tenax* many thousands of pounds sterling have been sunk, through expectations sanguine as my own, and with nearly the same result.

The *Phormium Tenax* requires three years growth from the young shoot to bring the leaf to maturity, and about seven years from seed. It thrives best in moist, rich land, and must be guarded from cattle, as notwithstanding the rank bitterness of the leaf, cattle render it unfit for use. It never can be grown to advantage where labor is dear, as those employed in scraping it can barely earn ten to twelve cents a day. The fibre, so celebrated for its strength, is not, strictly speaking, a fibre, but an immense number of very minute particles cemented together by the gum of which the leaf is chiefly composed. The New Zealanders scrape the flax with a shell, throwing away

about two-thirds of its bulk. After much hackling by white labor it is fitted for rope making. The loss in this process is from 12 to 20 per cent. reduced of late, by one manufacturer, by converting a part of the waste flax into wool-lashings for the Sydney market. When boiled with common salt, washing soda, or any other alkali, wood ashes from the fire, or common soap, the leaf, if properly attended to may be washed, and though far less sightly than that dressed by the natives, is still useful for rope. But this process, simple as it appears, is much too expensive, and requires from 8 to 9 tons of leaf to produce one ton of flax, requiring farther loss by hackling and dressing. By farther boiling to remove the gum, which adheres so long as the appearance of a fibre remains, the true nature of the Phornium Tenax is discovered; it becomes a valueless pulp, and is totally unfit for use. Pounded, when in a green state, by heavy hammers worked by mill power, so arranged as not to cut the thread, a very fine looking flax may be prepared, but the machinery would be very costly, and would barely leave a profit of ten to fifteen dollars per ton, even supposing labor could be procured at 25 cents per day, and a constant supply of leaves secured, which would require years of preparation, large capital, and great extent of land. The working of flax is dangerous on account of the small particles which fill the air to the great distress of the workmen.

A far more profitable speculation would be the introduction into these islands of the European Flax, which would thrive well under the same temperature as wheat and potatoes. It yields oil, oil-cake, and flax, and requires but simple machinery and small outlay. Cotton would thrive almost everywhere, and the single seeded cotton of the Fegees, is of such beautiful quality, and superior long and fine staple as to promise a rich reward to those who would attend to its cultivation. Corn brooms, if properly made; cocoa-nut husk for bedding, and cocoa-nut mats would add to the smaller exports. The quince tree grows very rapidly, makes excellent fences, (seldom molested by cattle,) and in the higher lands would produce abundant fruit.

With regard to poultry, it is not generally known that the seed of the sun flower, causes fowls to lay nearly double their ordinary quantity of eggs. The seed is also very useful for its abundance of excellent oil.

I beg leave to add that a public record of the names and countries of persons who have introduced, up to the present time, and who may hereafter introduce any new tree, plant, vegetable, animal, or bird, beneficial to these islands, would induce many persons to become contributors, and benefactors to the country.

THIERRY.

August 12, 1851.

MANUFACTURE OF LEATHER.

Mr. President and Gentlemen of the Royal Hawaiian Agricultural Society:

Among the many subjects claiming your attention as connected with the produce of Hawaiian soil, and the consequent individual and national prosperity of the kingdom is, as I conceive, that of the manufacture of leather.

It is however a subject with which I am not particularly acquainted, and to which I allude at this time only with a view to bring it before the society, and into the hands of those better acquainted with, and more able to do the subject justice.

Possessing, as we do, in great abundance, and of superior quality, hides and skins suitable for the manufacture of leather of every description; and bark, as I believe, superior to either oak or hemlock; an important and consequently increasing demand for leather, I see no good reason why so great a sacrifice should be made in sending our material to the States to be manufactured, first into leather, then into shoes, saddles, harnesses, &c., or returned to be made up here, some two or three years after the money is invested in the raw material.

Our hides and skins being principally shipped in the fall, accumulating throughout the year, we may reckon the money as invested six months before they are shipped from here; six more from here through the hands of the dealer to the tanner; a third six through his hands to the leather dealers; and a fourth six to find their way back from whence they started, costing us for the transportation and manufacture

six or eight times the amount for which we sold them, and really not worth to the consumer but about half as much.

According to the report of the collector of customs there were exported from Honolulu during the year 1850, twenty-six thousand five hundred and nineteen goat skins, for which, at fifteen cents each, the average price, the producer received $3,977. These after being dressed in the States are worth on an average $1 each, so that when we want them back to make into shoes, or for other purposes, we have to pay for tanning and transportation $22,512, for an article sold by us for less than $4000.

The same is true in regard to hides and sole leather. According to the same report there were exported during the same period 1319 hides or 20,241 lbs. at 6 cents per pound, the producer received $1,214, and for which is paid on their return in the form of sole leather at 37½ cents per lb., $7,590.

At present our hides are scarcely saleable here at six cents; in the States they are worth about eight cents, and when tanned they are worth from 11 to 14, while hides taken directly from the slaughter to the tannery, without salting, drying, or voyaging, are worth in the states when tanned 25 cents per lb. and here 37½ to 40 cents per lb.

And I would here remark that I think one principal reason that our hides command a less price in Boston or New York, than those of Montevideo, Buenos Ayres, and other places is owing to the practice of branding for the purpose of marking the cattle, in such a way and to such an extent as to reduce the value of the hide nearly one third; a practice which appears to me not only cruel in the extreme, but entirely needless, believing, as I do, that a brand on the horn near the head would answer every purpose, without the slightest injury to either bullock or hide.

With reference to hides it must be obvious to every one that there is either some mistake in regard to the number exported, or there are a large number wasted and destroyed of which we have no account; the latter is undoubtedly true.

It is a fact not generally known that with perhaps one exception the goat skins exported from these islands are the best known to shoe manufacturers in the United States, and command the highest price; my own opinion is could the same skins go direct to the tannery from

the slaughter, without salting, drying, or making the voyage, they would be worth nearly double their present value as it is well known that drying and salting, particularly the latter, renders the skin hard, brittle and liable to crack.

Another fact, a knowledge of which is limited, is that we do not have the credit of exporting these skins, they are known almost universally in the States as California skins. Ask a tanner, morocco dresser, leather-dealer, or shoe-manufacturer for Hawaiian or Sandwich Island goat skins, kid or morocco, he will tell you he is not aware there is such an article ; enquire for California skins you will at once be shown the skins exported from the islands. This fact, of little importance in itself perhaps, I suppose may be accounted for by reason of hides and tallow having been imported into the States from California, Central, and South America, with some fine goat skins from the latter places, for the last half century.

From careful experiments in French, English, German, Russian, American, Colonial and Hawaiian upper leathers, I am fully convinced that when well tanned and curried, the latter, from some cause, is not only more durable, but much more comfortable to the feet, retaining its elasticity longer than any other which I have ever used, and consequently less liable to break.

This I think is attributable partly to the superior quality of the bark used in tanning, and in part to the skins having been tanned without losing so much of their original strength by exposure to salt, sun, voyage, &c.

Shoe leather is quite an item of consumption and expense in this kingdom, and any thing tending to lesson that expense and at the same time enrich the people as the consumption increases, will, I apprehend be regarded for the public good.

The grand difficulty, as I have before intimated, with shoe leather in Honolulu, is the universal tendency of the upper to break away from the soles ; indeed it is almost impossible to find any upper leather which will wear out even an ordinary pair of soles. There are several reasons for this, one of which is the extreme heat to which the leather is exposed, both from the sun, and the sand in our streets which in the middle of the day is not unlike a bed of hot ashes to walk in ; this heat keeps the feet in a constant perspiration, which, if allowed to

penetrate the leather (as it is sure to do unless kept out by frequent applications of oil) destroys the elasticity and life of the leather, and prepares it to break rather than bend.

Another reason is said to be the saltpetre contained in our soil which also tends very much to destroy the life and strength of the leather. But the principle reason as I apprehend is that to which I have before alluded, viz: the fact that all leather made from hides or skins dried and salted, is hard, brittle, uncomfortable to the feet, and much less serviceable than what is usually termed slaughter leather. The latter commands double the price of the former, while the cost of tanning is about the same, and the hides originally just the same.

Tanning has been attempted at various times and by various persons on nearly or quite all of the habited Islands of this group, but owing to the want of the requisite skill, capital, or proper encouragement, it has in almost every instance been abandoned, and in some of them without benefiting either the operator or the public. Yet all have I believe acknowledged the superiority of our bark. There has been quite an amount of saddle and sole leather, as well as some goat and calf skins, tanned and finished very creditably; but I am not aware that any morocco dresser has ever attempted his avocation among us. The vats and other apparatus used have been of the simplest and rudest kind got up perhaps for the purpose of trying an experiment and often illy adapted to the purpose for which they were intended.

A gentlemen now residing upon one of our islands, acquainted with the business and fully competent for the purpose, made an estimate about a year since, of the cost of a tanning establishment after the model of the most approved ones in the United States, capable of turning out 2500 hides per year; and the profits on the same. The estimate, believed to be a very careful and correct one and founded upon the most reliable information, was shown to two or three of our residents and capitalists who examined and concurred in it.

By this estimate reckoning the leather at 37½ c. per lb., which has been about the average price for the last five years, the net profits, after paying all cost of material and manufacturing, was about $1000 for the year. He was obliged however to abandon the project for want of the necessary capital to commence with.

There can be no doubt it would be a profitable investment for any

one with the requisite skill and capital, besides leaving a large amount of money in the country, now paid out for foreign labor and capital, and conferring a benefit indirectly to the pockets and corns of all Hawaiians who wear shoe-leather.

You will permit me to say that I had not given the subject a thought until since listening to the report of our worthy president when it occurred to me that as no mention was made of the subject last year, it might also be forgotten or overlooked this year, and deeming it worthy the attention of our society, as well as one which is recognized and cared for by similar institutions in other countries, I have very hastily thrown together these remarks, hoping that such steps may be taken as will ensure next year, an amount of Hawaiian leather in our market sufficient at least for the manufacture of a pair of new boots for the exhibition.

J H. WOOD.

AN INQUIRY

Into the importance and necessity of an increased attention to Horticulture.

The subject referred to your committee, viz. Horticulture, is one so familiar to all who have been in any degree interested in the products of the soil, that its very familiarity renders it somewhat difficult to present it in such a light that any *new* motives may be derived to incite the members of this body to an increased attention to it.

Without further preamble, we will ask: "What are some of the motives which should urge the members of our society to pay more especial attention to Horticulture, as embracing the culture of every description of fruit trees and garden esculents?" Among these we would present the following:—

1st. The enjoyment it affords.

2d. The remuneration it would afford.

3d. Individual as well as national reputation.

These points may not embrace all the motives which should prompt the members of this society to greater exertion in this department, but

they cover a ground so broad that, if duly weighed, little doubt ought to rest with any that it is not only their duty as citizens, but one of the highest sources of pleasure allotted to men, to engage ardently in Horticulture.

It matters little what may be his particular occupation—the cultivation of his garden affords to the artizan as great a pleasure as to the man of wealth. As he returns from his daily labors, and enters the gate to his own homestead, he spies some new bud or flower, or fruit on the plant or tree which he has watched with care to see if the species could possibly be grown in this climate, and as he daily sees the progress of the new and untried plant, it affords him constant pleasure to point out to his visitors the success of his labor and recount the particulars of his manner of dealing with the exotic. Yet there are many that meet with disappointments, in the cultivation of new and rare plants, and it is on this point that we would urge those who have had success to point out the errors to be avoided. We appeal to all those who have been engaged in Horticulture whether they have not found in it their highest source of pleasure.

But another and more important motive is the *remuneration* which a successful cultivation of trees affords. There are several of the staple fruits of these islands, the cultivation of which promises as great a profit and wealth as any business which can be engaged in. To say nothing of the comfort of having an abundance of fruit in every family, or of the improved health which is guaranteed by its use, it should be our endeavor as members of this society to promote the culture of fruit as a source of profit. The day is not distant when the demand for our oranges and lemons, will far exceed our ability to supply it. Yet there are thousands of acres lying waste throughout this group, capable of producing as fine oranges as were ever grown in the Azores or in Italy. Especially is this true of vast tracts on the southwestern side of Hawaii, which nature seems to have fitted for a vast garden, soon to be cultivated to supply the wants of the rapidly increasing population on the northwest coast. The soil of these islands is of the same nature as that of the Azores and of Italy, which produce the finest of oranges. The island of San Miguel, one of the Azores, supplies London with from 15,000,000 to 20,000,000 of oranges annually. And so abundant is the produce that some of the trees yield from twenty to twenty-five

thousand oranges annually. The same may be done here, and the day is not distant when it will be done. These remarks will also apply to pine-apples, figs, raisins, and a few other fruits, the demand for all which will increase faster than our ability to supply them. It will not be long before the communication to the north-west coast is made so rapid that there will be no more risk in shipping oranges and pine-apples to that market than there now is in shipping the same products from Koloa to Honolulu.

Closely allied to this and forming another motive to perseverance, is our national reputation. We are beginning our career, and our reputation remains to be established. How much advantage our sister island, Tahiti, has over us in this respect. Already do her rich fruits draw a fleet of vessels for that trade which advantage in locality will award to this group, if we only awaken to our true interests. It is said that so great is the trade in oranges between the Azores and London, that seventy-five small vessels may be seen at once, during the harvest season, in the harbor of San Miguel. The day may not be far distant when a similar scene may be noticed in the bay of Kealakeakua on Hawaii.

The subject of Horticulture is one of such importance to us as individuals and as a people, that your committee feel that it has not received in this hasty report that attention and inquiry which it demands. They would therefore request that a committee be appointed to act during the coming year, and collect information and statistics showing the state and progress of Horticulture throughout the group. Such a document would be valuable in showing the annual progress at future periods.

All which is respectfully submitted.

HENRY M. WHITNEY, *Chairman.*

COMMUNICATION OF R. C. WYLLIE, ESQ.

To all who are interested in the prosperity of this kingdom, it is of importance to consider what the islands are capable of. They contain, as you all know, an area of 6,050 miles with a population, perhaps, not exceeding, at this moment, 80,000 souls. It is believed that taking the whole of Europe, the population averages 70 to the square mile. At this rate the Hawaiian islands should support a population of 423,500 souls.

But, if we take the island of Barbados, which comprises a surface of only about 106,470 square acres of land, abounding in mountains and precipitous ridges, divided by deep ravines or gullies, and yet by the last census of 3d June, 1844, had a population in its twelve parishes, of 122,198 souls, the Hawaiian islands with their 3,897,600 square acres, ought to be able to support a population of 4,473,362 souls.

Let us see to what extent sugar plantations have been carried in that small triangle of land, (Barbados,) measuring only 21 miles by 15, while Oahu, alone, measures 46 by 25, and has a surface of about 339,200 square acres. The following table of Barbados will surprise most of you :

Parishes.	Sugar Mills.	Four wheel carriages.	Two wheel carriages.	Horses.
Christ Church,	60	37	43	517
St. Michael,	40	158	145	1009
St. George,	54	31	51	611
St. Philip,	52	34	47	543
St. John,	38	19	38	480
St. Joseph,	41	4	18	311
St. Andrew,	26	0	2	138
St. Thomas,	55	16	25	461
St. James,	32	11	11	194
St. Peter,	46	19	37	338
St. Lucy,	35	11	21	211
Total,	479	340	438	4813

Owing to the density of the population, Barbados is the only island of the West Indies which has not suffered by the emancipation of the slaves. In 1844, the export of sugar alone was about 460,000 cwt. At the same rate of sugar production, the 3,897,600 acres, in the Ha-

waiian islands, ought to export 16,839,447 cwt., which at only 2 cents per pound would amount to $37,720,361 annually.

But it may be said that this comparison is unfair, as it assumes that the whole of the Hawaiian soil is fit for cane cultivation. It assumes no such thing, but merely that relatively to the whole, there is not more of the Hawaiian soil unfit for cane cultivation, than there is of the soil of Barbados. The table before given, shows that that island devotes part of its soil to the pasturage for 4813 horses, mules, &c.; it affords pasture, besides, for numerous cattle, and exports rum, molasses, arrow-root, aloes, cotton, ginger, cocoa-nuts, log-wood, hides, tamarinds, cocoa and coffee.

Where so small an island exports so much, it is not surprising that it should have to import largely of the necessaries of life for the sustenance of its inhabitants. These islands would probably be under the same necessity, if the population should increase to 4,473,362, which I hold to be just as possible, as that the population of Barbados from the part of a ship's crew landed in 1605, should have increased to 122,198 souls on the 3d June, 1844. Great Britain is the richest country on earth, although it has to import largely of the necessaries of life; Barbados is, comparatively, the richest of the West Indian islands, although it is in the same condition; and the Hawaiian islands might be teeming with wealth, although, in exchange for their sugar, coffee, tobacco, &c., they should draw much of their supplies of grain, &c., from Oregon and California. According to my ideas of political economy, it is just as certainly the shortest and easiest way for a nation to become rich, to confine itself to what it can make of the best quality, and at the cheapest price, as it is for an individual to follow the same maxim, buying what he does not make, from his neighbor, who can make it better and cheaper than himself. Upon this principle every nation will support not alone the population for which it can raise food, but that and the farther population for which it can buy food.

From this brief statistical statement, the conclusions which I draw, are the following:

1. That the hopes of the wealth, power and glory of this kingdom depend exclusively upon its agriculture.

2. That the Hawaiian islands afford a wide field for capital and labor in the cultivation of the soil.

3. That that field is a virgin field hitherto neglected and unproductive.

4. That those who have formed, or rather are forming, plantations on these islands, are public benefactors, and that in granting them every possible encouragement, the government will only do its duty, and consult the best interests of the Hawaiian people.

5. That the Royal Hawaiian Agricultural Society, is an institution eminently calculated to give a wholesome direction to the industry of the inhabitants, and to promote all the substantial interests of the Kingdom.

6. That all the friends of PROGRESS, must wish well to the Royal Hawaiian Agricultural Society.

I cannot imagine how any man of common sense, or common loyalty to the King, can be otherwise than a friend of *progress*, where the sin of the past has been a vis inertiæ, and where all the hopes of the future depend upon a *strong pull, and a pull altogether*, in the direction FORWARDS.

The first star that has arisen to shed a ray of hope on the destinies of these lovely, and naturally rich islands, is this same Agricultural Society, and however little I can aid it, individually, I can bid it, as I do bid it, very cordially, God speed.

R. C. WYLLIE.

ON AGRICULTURAL IMPLEMENTS.

To the Committee on Implements, for the Royal Hawaiian Agricultural Society:

GENTLEMEN:—In answer to the first question, I consider the most prominent defect to be *bad material* used in the manufacture of the implements. Almost all of the carts are made of lumber which is unfit for the purpose. I have now six new ox and horse carts, from Boston, direct, with white ash spokes and pine fellows, good for nothing but to burn. Everything should be made of the best of *white* oak.

Iron hubs are not fit for this country. *Cast iron shafts* in sugar mills are very bad. None but *wrought* iron shafts should be brought here. If we had a foundry and machine shop here, perhaps cast iron might be best, but as the case stands, *cast iron shafts for mills should not be imported.*

Nourse and Ruggles' centre draught, and side-hill ploughs. My place being almost all on the slant, the side hill plough is to be preferred. It will do one fourth more work, in the same time and do it much better.

I find Nourse and Ruggles' No. 1 to be an excellent plough for heavy work. I would have two No. 1, four No. 3, two No. 7, all side-hill.

I think that everything we want to use in this country can be made in the States and brought here much cheaper than we can make them.

I make my own carts and yokes because I cannot buy any that will stand. There are several kinds of wood here which answer very well for carts, but the price of labor and iron induce me to get my carts made in the States, providing they were made by honest men.

A good cart, such as I use for hard work, costs me to make it abou $240. My father used to make such, in Pennsylvania, for $94. Two tons is the regular load.

Let us have some agents in the states to procure for us implements of the very best material and let them have instructions how to have them made ; say at Philadelphia for carts and oak ; Boston for yokes and ploughs.

Let the wheels be finished complete, and the axles, (wooden by all means, with steel skeins,) fitted, together with the tongue. Send the lumber for the bodies and make them here. Why don't you offer a premium for the best model of a cart, and the best manner of ironing a yoke ?

My natives take great pride in using foreign implements, and use them very readily.

Gentlemen I only speak of such implements as I use. We are a carting people on Maui, and in the last six years I have had some experience in carts and yokes. Yours,

L. L. TORBERT.

Honuaula, July 21, 1851.

ON AGRICULTURAL IMPLEMENTS.

Honolulu, August 13, 1851.

GENTLEMEN :—We beg to apologise to you for having neglected, until this late hour, to reply to the queries contained in your circular letter of the 8th inst. We are as yet but mere novices in experience of the cultivation of the soil, and our views are consequently of but little value compared with those of older planters. To reply, however, as well as we are able to your queries, we would say first :

As to the most prominent defects in the implements now in use on the islands. That in our opinion the ploughs in use, or to be had in this market, are of the best description. The heavy English iron plough we consider the best for breaking up the ground, though we know that many planters, of more experience than ourselves, prefer the American Eagle plough. If any defects exist, the principal is that the plows are not large enough, or do not plough deep enough for cane planting. For planting cane in drills the Double Mould Board plough. Mr. Burbank of the Koloa plantation, Kauai, has made a plough of this description which is said to answer the purpose, though it requires 8 yoke of oxen to draw it. Mr. Burbank will doubtless make valuable improvements on this plough.

Every variety of harrow is in use here. Hoes in use here are generally too small and easily broken. Large steel hoes of the best quality, with large eyes, are, in our opinion, the cheapest for the use of the native laborers. The same remark may be applied to spades, shovels and oos.

Carts are generally imported of too slight materials, and under the management of natives, with their half broken cattle, are soon destroyed. They should be made exceedingly strong, and of well seasoned wood to do much service.

The prominent defects in mills for grinding cane are, that many of them are made of wood, and most even of the iron mills are on too small a scale to render the business of manufacturing successful. The mill recently imported by Messrs. Wood and Spencer, for their plantation at Maui, and that now in process of erection at Lihue, Kaui, are we believe the two largest on the island, though smaller than many of the mills now being brought into use in the West Indies. The rolls

of our mill are 4½ feet in length, and 26 inches in diameter, and weigh about 3 tons each.

The machinery for manufacturing sugar is also in an exceedingly rude state, and many improvements could be pointed out, and are in deed daily being introduced, which would require more particular description than can be given in this connection. We cannot, however, omit the mention of an invention for purging sugar, recently brought into use in the West Indies, and now about being introduced here. If successful in its operation it will add much to the value of our sugar plantations, saving much time and labor. The present process is to take the warm sugar from the granulating tables, and place it in vats or boxes, where it remains until the molasses has drained through these boxes. This process occupies from two to six weeks, according to the state of the atmosphere, and is of course very uncertain and tedious, and often occasions loss to the planter by a fall in the market before the sugar is fit for shipment. The planter is also tempted to pack his sugar before it is thoroughly drained, in order to take advantage of a rise in the market, and thus the reputation of the island sugars is much injured.

The machine in question obviates all these evils, and turns out the sugar fit for packing and shipment in a few minutes from the time it is taken out of the granulating tables. It is called the "centrifugal separator," and consists of a perforated cask into which the sugar is thrown and by very rapid revolutions the molasses is forced out through the sides of the cask very rapidly leaving the sugar clean and dry. The power may be given from the motive power of the mill, or independently, as is most convenient. A more particular description of this machine was kindly furnished us by his Excellency R. C. Wyllie, who will perhaps communicate it to the society. Several of these machines have been ordered of Mr. D. M. Weston, a practical machinist, now in Honolulu, who came out from the U. S. for the purpose of setting up our sugar mill, to whom we would recommend planters to apply for information on this subject.

As we have occupied so much time in replying to your two first queries, and as you will doubtless receive valuable information from others on the other points in your letter, we will not now attempt any reply to them. Very respectfully, your ob't servant,

H. A. PEIRCE, & CO.

COMMUNICATION FROM J. G. SAWKINS, ESQ.

Mr. President and Members of this Society :

I wish I could speak practically on the points that casual observation and the absence of many practical hints from some of the committees induced me this morning to pen previous to meeting you here,—I beg you to receive them as the hasty observations of a traveller. When I have gone forth from my peaceful and ever entertaining studio, it has been with the object of observing nature, scrutinizing her various Geological, Botanical, and Chemical formations ; rarely neglecting to note as far as my humble capacities permit, how their products may conduce to the happiness of our fellow-beings. The results of these observations, are, that volcanic formations are of so recent a date at these Islands, is the first great cause of their sterility, in comparison with the older volcanic islands of Cuba, Jamaica and others of the West Indies. Basalt, lava or escoria in the absence of lime, silex and nitre is too arid and unkind to create or mature vegetation ; consequently we do not find the stately cyba, mahogany, cedar, cypress, and innumerable other trees of 150 to 200 feet high ; but we find every species of the locust, shoots up with avidity. I beg leave to direct the attention of all the members of this society to that brought from Kauai, 3 years ago and planted by the Rev. Mr. Bishop at Waianea—there are now 4 or 5 of these 25 to 30 feet in height. I entertain no doubt a good fence may be easily constructed, by planting the seed or scion around the land intended to be enclosed, 9 feet apart—in 4 or 5 years cut off 7 or 8 feet from the ground they will form good solid posts, four or five, 3 inch auger holes being bored into these posts at suitable distances, to receive the rails, for which abundance of wood will be found in the tops and branches—such is the prolificacy of this tree and fostering nature of the soil, that wherever seed has fallen from its branches, they have taken root, forming at present a miniature forest This and other instances observed in recent volcanic formations induces me to believe, that, whenever desirable this island could be covered by its shadows in the short space of 10 years. The chestnut is another tree I would suggest as highly applicable to volcanic soils.

A small specimen of boron from one of the islands in a pulverized state, was submitted to me for analysis, as far as my tests admitted,

satisfactory results were obtained. This may become an important item of export, as that now used is either brought from the lakes of Tuscany, Thibet, or the Lipari Islands.

Nitre is not found pure, so far as I can learn on this group at least none has come under my notice.

Sulphate of soda is the most abundant. The muriate of soda, rarely pure, on account of the sulphurous gases of the neighboring active volcanoes. I have made experiments in this article, with satisfactory results which, if carried into successful operation would result greatly to the benefit of the inhabitants, in curing of meats, fish, &c., which up to this moment I believe has been a failure.

Another resource, under the destructive disposition of the native is verging on extinction. I mean the pearl oyster, it is nearly devoured.

The want of native labor, a subject vital to us all, has occupied much of my attention. The result has developed two great causes—1st The impossibility to extricate themselves from the distinctions human distributions of power has placed them. 2nd Their philosophical contentment under so benign a climate whose almost spontaneous products are sufficient to supply their wants. I will endeavor to demonstrate my meaning by the observations of a negro in Jamaica when asked why he did not work and make himself rich! He replied: what for me work, massa? these banana give me plenty of fruit, this river give me plenty of fish, that sow give me a litter of pigs every year, which I sell to buy clothes; what for me work, massa? Me always black man, white man no care for nigger; no honors! no office for nigger; what for me work massa? Hence then the belief that much more depends on ourselves than we are disposed to saddle. *We* must seek an incentive to move them from this philosophical contentment, we must endeavor to elevate them above their condition by leveling the feudal distinctions by which they have been coerced, make them feel that virtue and wealth will elevate them above these human distributions of power; plant the seeds of virtuous ambition, in every shape and form our superior intellectual reason can devise; let them feel and know that by superiority in any labor accompanied by virtue, they can obtain a position in society above the level of their forefathers, and most of all avoid every means calculated to make them feel the degraded position, circumstances, or the orders of creation have placed them.

Thus removing the desponding and depressing influence the above causes have, and as long as they last will produce, viz., inebriety, indolence, apathy. We must divest ourselves also of prejudice, and let our distinctions among men be for their virtues and not their color. And last of all I would suggest as an important influence to this end, limits to our ambition, in the acquirement of land; no man wants more than 500 acres of arable land for his own cultivation ; it is a problem long since solved that large land proprietors are a clog on a nation's prosperity.

NAMES.

OF MEMBERS OF THE

ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

LIFE MEMBERS.

French, William, (deceased.)
Hubertson, Geo. Frederick
Janion, Robert C.
Kenway, Geo. S.
Lee, Wm. L.
Marshall, J. F. B.
Makee, James
Pierce, Henry A.
Pitman, Benjamin
Vida, F. R. (deceased.)
Wood, R. W.
Wyllie, Robt. Crichton,
Miller, Wm., H. B. M.'s Consul General.

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Andrews, L.
Alexander, W. P.
Armstrong, R.
Aldrich, W. A.
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Bates, A. B.
Brewer, C. 2d
Bailey, E.
Baldwin, D.
Bond, E. P.
Bond, E.
Bishop, A.
Bishop, C. R.
Brown, T.
Burdick, J. A.
Booth, J.
Bowlin, R. H.

Castle, S. N.
Cark, E. W.
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Cumings, P.
Cartwright, A. J., Jr.
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Clark, A.
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Heap, H. J.
Harris, C. C.

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Newcombe, W.

Ogden, F.

Cahoon, C. W.
Coady, R.

Dominis, J. O.
Dowsett, J. I.

Everett, T. W.

Gulick, O. H.
Goodale, W.

Howe, A. B.
Hackfeld, H.
Hardy, J.
Hardy, B.
Hoffman, E.
Hollingsworth, R. J.

Jarrett, W.

Kaauwai, Z.

Lathrop, G. A.

Mitchell, I. R.
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Marshall, T. H.
Maughan, J.
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Miner, E.

Paki, A.
Parker, J. P.
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Pease, W. H.
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Perry, S.
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Reynolds, S.
Robinson, J.
Rice, W. H.
Rooke, T. C. B.
Rogers, E. H.
Russ, A.
Rhodes, G.
Rhodes, H.

Severance, L.
Sea, H.
Sawkins, J. G.
Snow, B. F.
Smith, J. W.
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Swan, L.
Spencer, A. H.
Spencer, T.
Sumner, W.
Snodgrass, W. K.
Spalding, J. C.

Taylor, T. E.
Thierry, Baron de
Torbert, L. L.
Thurston, A. G.
Thorp, R. A.

Vincent, C. W.

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THE

TRANSACTIONS

OF THE

ROYAL HAWAIIAN

AGRICULTURAL SOCIETY:

AT ITS SECOND

ANNUAL MEETING IN JUNE, 1852.

VOL. 1. NO. 3.

HONOLULU, H. I.
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PROCEEDINGS

OF THE

ROYAL AGRICULTURAL SOCIETY,

SECOND ANNUAL MEETING,

HONOLULU, JUNE 1, 1852.

The Society met in the New Court House, at 10 o'clock, A. M., according to adjournment.

The minutes of the last session of August 15th, 1851, were read.

Art. 9 of the Constitution of the Society was read, by which it is made the duty of "the retiring President to render a report of the proceedings of the society for the current year, and deliver, or cause to be delivered, an address at the annual meeting of the society."

In conformity with this requisition of the constitution, the President, Hon. Wm. L. Lee, read his Report, as follows :—

Gentlemen of the Royal Hawaiian Agricultural Society :—

We meet under the most trying circumstances. The last twelve months have been the most critical ever known in the agricultural and commercial history of our Islands, and are marked by ruin to many, and misfortune to all. The sudden check of our trade with California—the consequent fall in the prices of our products—the lack of the

necessary capital to meet reverses—and the unparalleled drought, which has shriveled and blasted our coffee—scorched and withered our verdant cane-fields—turned our pastures into ash-beds—dried up our kalo patches and blighted our vegetables, has been an accumulation of misfortunes which has overcome some of our strongest hearts, and which none have been wholly able to withstand. We meet I say under the most trying circumstances—not prostrate, but crippled—still moving, but under a staggering load of depression. Allow me then, before proceeding to a detailed report of our transactions since the last annual meeting, to take a brief survey of some of our troubles, that you may make suggestions and take measures for their future remedy.

In the first place, the great obstacle in the way of agricultural success in these islands is the want of capital. We have land enough and to spare—good land—and a climate that knows no equal; but what avails all this so long as we have no money with which to improve our lands? We cannot carry on farming in the Sandwich Islands as in England and the United States, with nothing but our hands to aid us, for here we must have capital in the outset, and that too in no small measure, or behold our labors end in disappointment and ruin. All who have had any experience in plantations, I think will bear me witness, that to carry on a coffee plantation, successfully, requires in the commencement from ten to twenty thousand dollars, and a sugar plantation from twenty to one hundred thousand dollars. There may be exceptions to this general statement, but I know of only one in all the group, and I believe it is the universal opinion, that he who has begun with nothing, has undertaken the task of Sisyphus, to roll a huge stone up hill, which in nine cases out of ten will eventually get the start of him, and carry the poor struggler to the bottom. I am pained to make this statement—deeply pained—but with the past and present before me, how can I say less. From the earliest days of planting in these islands, when the plough was drawn by a team of natives, down to the present moment, the way of the planter has been clogged with this great difficulty—his path has been clouded with darkness, and many a strong arm and brave heart after toiling on for years, under a constantly increasing mountain of debt, has gone down in despair. Money!—money!—money! is the constant cry of

our planters, and their appeal is to the winds, for we have no capitalists to lend or invest. But where is the remedy for this paramount want? I confess myself unable to answer, and I turn to our committee on capital in the hope that its collective wisdom may have devised some means for the solution of this important problem. It is a subject that calls for our most earnest attention, for though I would not color the picture darker than it really is, yet I am constrained to say, it is my solemn conviction that, unless we can obtain assistance from some quarter, we shall soon see ruin resting upon nearly every plantation in the land. My faith is not shaken in the *final* success of our plantations, for now, as ever, do I firmly believe that there is no business in these islands that will better or more surely reward capital and industry than agriculture, provided that capital and industry be expended with judgment and economy.

But money is not all we require to prosper, for combined with this want is the almost universal lack of *system and economy* in the expenditure of our labor and the little capital we possess. Since our last meeting my judicial duties have called me to nearly every part of the kingdom, and, with very few exceptions, I have observed on all the plantations I have visited, a disregard of system, and want of economy in the application of labor, that has filled me with equal surprise and distress; and I believe there is no planter on the islands that has not deeply felt the truth of what I say, in his own individual case, and remarked the same lack of good management in others. I know it is far easier to preach than to practice order and economy, but still I think we can improve on this score, and that, with the aid of Chinese laborers, we can perform our work more systematically, thereby saving great loss, together with any amount of vexation and wear and tear of body and mind.

Another thing we need, as I had occasion to remark at our last meeting, is better machinery. It is in vain for us to hope for success so long as we continue to express our cane juice by wooden mills worked by cattle, and to boil it in try-pots, heated by furnaces which more nearly resemble caverns in the rocks than the work of a skilful mason. I am aware that great advances have been made in this respect within the last year, especially on the islands of Maui and Kauai, and these improvements are worthy of all credit, yet this work of

reform is but little more than begun. The past year has brought us one improvement worthy of particular notice, namely, Mr. Weston's "Centrifugal Separator," which has worked wonders in improving the *quality* of our sugars, without producing a loss in *quantity*. But this machine, valuable as it is, in giving us a better article in a shorter time than the old system of draining, by no means supersedes the necessity of erecting bins on the old plan; for it will not separate bad sugars, which must be thrown into these wooden boxes to drain by a slower process. No one who has visited the sugar regions of East Maui within the last year, can fail to have had his heart sickened with the sight of three or four hundred acres of the finest cane, going to ruin beyond the hope of salvation, all for the want of proper and sufficient machinery for its manufacture. But this appeal for more and better machinery will be met by the great prime question raised in the outset: "Where is our capital with which to make these improvements?"

On the subject of labor, I am happy to say there is less to fear than formerly. The enterprise set on foot by our society for procuring laborers from China, has at last met with success, and much credit is due to Capt. John Cass for the faithful manner in which he has carried out the experiment of introducing coolies. The Chinese brought here in the "Thetis" have proved themselves quiet, able and willing men, and I have little doubt, judging from our short experience, that we shall find Coolie labor to be far more certain, systematic, and economical, than that of the natives. They are prompt at the call of the bell, steady in their work, quick to learn, and when well fed will accomplish more, and in a better manner, than any other class of operatives we have. The cost of importing coolies is fifty dollars per man, and it has been estimated by those who employ them, that their wages and support amount to a trifle under seven dollars per month. They are great eaters, but their food, chiefly composed of rice and a little meat, is of the cheapest kind, and to make them profitable they should never be stinted in their allowance. To all those planters who can afford it, I would say procure as many coolies as you can, and work them by themselves, as far as possible separate from the natives, and you will find that, if well managed, their example will have a stimulating effect on the Hawaiian, who is naturally jealous

of the Coolie and ambitious to outdo him. There is still a deficiency of labor in some islands, but I believe the door of relief is open to us and that we can procure laborers at a cheaper rate than any other sugar or coffee growing country, except those in the extreme East, or more properly speaking in this longitude, the Far West.

A serious drawback to the progress of agriculture during the past year has been the want of a ready market for our produce, especially for sugar and potatoes. California now raises her own vegetables, and the low price of sugar in San Francisco, produced by overstocking that market from Manilla and China, united with the heavy duty on sugars, has nearly stopped our shipments until within the last few weeks. The Board of Managers of this Society has put forth an effort to obtain the abolition of that duty, and the Hawaiian Government has seconded that effort by the enacting of a law removing all duties on Flour, Fish, Lumber, etc., imported from the United States, provided our Coffee, Sugar and Molasses, is admitted into that country duty free. I confess I am not very sanguine of success in this measure, yet I have hopes.

Let us now pass to a brief notice of our grazing interests.

This interest has suffered in common with all others, owing in a great degree to the drought and low prices, but to some extent from bad management. The day has gone by when our graziers can look to the markets of Honolulu and Lahaina to consume their cattle in the shape of fresh beef; for the increase of our herds is so great, that the competition will soon become ruinous. Within the last year good cattle have been sold by hundreds on the island of Kauai for prices ranging from one and a half to two and a half dollars per head, and yet they are increasing with alarming rapidity. Many of our pastures are overstocked—the supply of fresh beef exceeds the demand, and the time has come when our cattle growers should turn their attention to packing beef for a foreign market. Salt beef commands high prices, but we have none to sell, except a few barrels occasionally received from Hawaii, and why? It is said because our salt is not good, and will not preserve beef. If so, then why not make our salt better, and encourage and assist Mr. Vincent to put in practice the knowledge he is said to have obtained on his recent visit to the United States respecting the improved manufacture of this important article?

I believe we can make as good salt here as any where in the world, with the requisite care and skill, and I have sufficient faith in Mr. Vincent to think that what can be done in this way he will accomplish. I repeat it, we should become not only *growers but packers of beef*.— And this is not all, we should be extensive makers of butter and cheese. We have, it is estimated, about forty thousand head of cattle on the islands and yet do not make enough butter and cheese to supply the wants of some 1500 foreigners. This is a subject of equal astonishment and regret ; and I trust that the exertions and premiums of the Society respecting cattle, will, for the future, have a special reference to the improvement of our milch cows. The breed of our cows so far as their milking properties are concerned is miserable, and I have never seen a real good milch cow in the islands, though I am told they are to be found. The Hereford Cows are said to be good milkers, and I am glad to have it in my power to inform the Society that this breed, imported by Mr. Hopkins I believe, is doing well, and promises a great improvement in crossing with our native stock. The Ayrshire Cows are generally esteemed as the deepest milkers, in climates suited to their constitution, but they are small, and whether they would do well here remains to be seen. One great obstacle in the way of dairies in these islands is the wild state of cattle, arising mainly from the barbarous practice of hunting them with horse and lasso, and tying their heads down to posts and cording their legs whenever they are milked. It is a mistaken opinion that our cows cannot be tamed and rendered docile and kind, as has been proved by some of our most intelligent dairymen on each of the islands.

Intimately connected with this subject is that of raising sheep, which I would recommend to the earnest attention of the Society as worthy of particular encouragement. It is said by those competent to judge that it can be made a profitable business in the high waste lands of the islands, and the report of last year on sheep will well repay a perusal to all interested in this subject. Our mutton is superior, as all who have tasted it can testify, and yet it is the dearest and scarcest meat the market affords. Of our wool I know nothing except that little or none is exported, and learn that not a fleece is clipped on this island, though it numbers some 5000 sheep.

In reference to our horses I take pleasure in remarking that great

improvements are taking place in our mongrel breeds, by the importations of stallions and mares from the United States and Sydney, and much credit is due to our valuable committee on horses for their efforts in this line. The suggestions of this committee respecting inferior stallions is now receiving the consideration of the legislature, and I trust their recommendation will soon become a law, and these vagrant nags be rendered harmless.

In the way of obtaining new plants and seeds little has been accomplished by the Society since our last meeting beyond writing for them to Oregon, Sydney and other quarters, from which we have as yet received no returns ; but individual enterprise has added quite a stock to our fruit trees, and it is hoped that to many of them our soil and climate will prove congenial. Among these new comers I may name the plum, pear, apple, quince, cherry, currant, gooseberry, and a new variety of fig. I am sorry to report that we have not as yet been able to locate the land granted to the Society for a public nursery, owing to the delay in settling the native claims therein, but we hope to be able to do so before our next annual meeting.

A new enterprise has been recently undertaken in the systematic cultivation of the tobacco plant, and for its encouragement the Society has offered premiums. During the year 1851 there were imported into the Kingdom, through the Custom House of Honolulu alone, upwards of three millions of cigars, which have been mostly consumed here, say at the average price to the smoker of ten dollars per thousand, which makes the neat sum of thirty thousand dollars paid for cigars alone, to say nothing of the amount expended for chewing tobacco. It is said by those experienced in the cultivation of this plant, that our soil and climate are well adapted to its growth, and that we are not here as elsewhere subjected to the ravages of the tobacco worm. If this be true, why should we not save the thirty thousand dollars annually expended for cigars, and moreover, as I heard a gentleman remark a day or two since, export half a million's worth every year. I know this plant is abhorred by many as a digusting and poisonous drug, and volume after volume has been written, sermon upon sermon, and lecture upon lecture delivered, by monarchs, doctors and divines, to exterminate it from society, but all to no avail, for in spite of this general crusade, it has not only held its ground, but eaten its way into the

ranks of its bitterest enemies, and smoked them out of their strongest citadels. There can be little doubt that this delectable weed is on the whole injurious, but not so much so as to induce men to forego its use; and judging from the past, the hope of diminishing its consumption is an idle one. Dr. Venner in a work published in London as early as 1663, denounced it in the following terms:—"It drieth the brain, dimmeth the sight, vitiateth the smell, hurteth the stomach, destroyeth the concoction, disturbeth the humors and spirits, corrupteth the breath, exsicateth the windpipe, lungs and liver, annoyeth the milt, scorcheth the heart, and causeth the blood to be adusted." But while learned doctors have condemned, scholars and poets have extolled it, as the soother of trouble, the collector of thoughts, the looser of tongues, the wings of imagination, the warmer of hearts, "the gift of Heaven and the ornament of the Earth." Without stopping to discuss the merits of these contrary opinions, I will simply say that I trust the Society will give a cheering word to those engaged in its cultivation. Mr. Opitz, and Messrs. Bucholtz and Wundenburg, of Kauai, are devoting considerable attention to the growth of this plant, and I learn that the former gentleman is now ready to manufacture 200,000 of the best Hawaiian cigars.

On the subject of wheat, oats, and Indian corn, I must refer you to the report of the able committee on those grains, but I cannot forbear to mention the delight I recently experienced as I cast my eye over the waving fields of wheat and oats at Makawao, so pleasantly recalling the dearly cherished memories of harvest and home. Mr. Green, whose specimens elicited such general admiration at our last exhibition, has some forty acres of beautiful wheat now ready for the sickle, and I can testify to the excellence of his grain, from having eaten many a savory loaf made of it during the last few months. Makawao now has the honor of owning the only threshing-machiue and flour-mill on the islands.

The committee appointed to procure the Honey Bee has taken the necessary steps to obtain them from Australia, and I hope we may soon have these busy little workers humming in our gardens, and gathering their now wasted sweets. Mr. H. A. Peirce, one of our life members residing in Boston, sent us a fine hive by the clipper ship R. B. Forbes, but unfortunately they were lost in crossing the tropics, notwithstanding the precautions that were taken to preserve them.

The financial condition of the Society is sound, and we now have one thousand dollars permanently invested on good real estate security. Five hundred dollars have been sent to the United States within the last few months by Mr. James Makee to be invested in premiums for distribution at this meeting, but we regret to say that they cannot be expected to arrive for some time to come. Besides this sum two hundred and seventy-five dollars have been expended for printing the transactions for 1851, and for a full and detailed account of our receipts and expenditures, I beg to refer you to the report of our efficient treasurer.

Our Society is prosperous, and notwithstanding the severe pressure now resting upon every branch of business, we have before us the most flourishing prospects. For our liberal support we would make our grateful acknowledgments, not only to those directly interested in agriculture, but to our merchants, mechanics and professional men, who have so cheerfully contributed their money, their labor, and their influence, to the promotion of our cause. The vicissitudes of trade during the last year have awakened an interest in agriculture never before manifested, and all seem to feel the weight of the great truth, that the cultivation of the soil is the only solid foundation of our commercial and national prosperity. All must be aware that unless our imports can in some way be balanced by our exports, we shall constantly grow poorer and poorer, and from what source can we derive those exports if not from the products of the soil? We have no mines, we have no heavy manufactures, except the single one of salt, and our main reliance is in the plough. Let us continue then our exertions in this important field with zeal and diligence, with perseverance and determination, let us "look not mournfully back upon the past," but continue to plough and to till, to sow and to plant, trusting in Heaven for a blessing on our labors and an abundant harvest.

On motion of J. Montgomery, the report of the President was accepted.

On motion of R. W. Wood, a vote of thanks to the President was passed, for his able address.

Reports being called for, the Treasurer then read his annual report, which is as follows:

SECOND ANNUAL REPORT.
OF THE TREASURER OF THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

During the period between August 11th, 1851, and June 1, 1852, (the second year of this Society) no life members have been added to the thirteen who subscribed in the previous year, but one hundred and twenty annual members, at five dollars each, have subscribed, which is three more than in the first year; so that while the amount received for certificates of annual membership is fifteen dollars more, the whole receipts from subscribers, is six hundred and thirty-five dollars less, than in the first year, from which difference, deduct the five hundred dollars appropriated by the government and the 108 and 48-100 dollars received for interest on last year's investment, and it leaves the total receipts for the second year, 26 and 52-100 dollars less than the first, as will appear by the account of receipts and disbursements herewith submitted.

By an act passed June 18th, 1851, the Society is entitled to receive annually from the Hawaiian Treasury the sum of five hundred dollars, provided the Society raise from contributions the like sum to be expended for "Premiums or otherwise for the encouragement of agriculture," and that the Treasurer make an exhibit in the month of January to the Minister of the Interior, of the receipts and disbursements, and prove to his satisfaction that the required sum has been raised, and expended according to the provisions of said account. Therefore it is highly important for the pecuniary interests of the Society that subscriptions for at least five hundred dollars, be procured, the money collected and duly appropriated before the month of January expires, for by neglecting to do so, the Society would forfeit its right to the five hundred dollars from the Treasury. Through the liberality of the patrons of this Society, notwithstanding the close times for money, I was enabled to raise the sum of five hundred dollars, which was paid over to James Makee Esq., by order of the Board of Managers, to be invested in premiums. I made an exhibit to the Minister of the Interior, and received on the 21st of January, five hundred dollars from the Treasury.

At the close of the last annual meeting there were twenty-three premiums due to seventeen different persons, remaining unpaid for want

of the proper articles to deliver. The list was placed in my hands, with directions to pay cash to such as chose to accept it, in lieu of the medals etc. to be ordered. Notice was published in the Polynesian newspaper for four weeks requesting all those who wished for the money to call for it. In December six premiums belonging to four persons, and amounting to twenty-three dollars, were paid within the time limited in the advertisement. The balance, sixty-six dollars was provided for in the order delivered to James Makee, Esq., to purchase medals etc. in the United States.

Agreeably with instructions from the Board of Managers, I loaned on the 22d March five hundred dollars for one year, and took a mortgage on Real Estate as security; which sum added to the five hundred dollars invested in 1850, makes one thousand dollars thus secured to the society.

The account current hereto annexed, together with the vouchers for the expenditures, are all respectfully submitted.

CHAS. R. BISHOP, Treasurer.

Dr. Royal Hawaiian Agricultural Society,

In acc't current with Chas. R. Bishop. Cr.

1851.		Dr.	Cr.
Aug. 11.	To Cash paid for paper.	50	
16.	" " Dr. Rae, (Lecturer on geology.)	30 00	
Nov. 7.	" " A. Bolster for lighting the chapel for Address and lectures.	3 00	
13.	" " Duties on 1 box books from Eng. and 1 from the U. S.	10 15	
Dec. 3.	" " Rev J. S. Emerson amount two premiums.	8 00	
13.	" " Mr. A. Paki	5 00	
13.	" " Miss M. M. Smith one do.	5 00	
13.	" " Rev. J. S. Green one do.	4 00	
20.	" " James Makee Esq., to be invested in the U. S. in premiums for the Society.	250 00	
23.	" " Ditto do do. do.	250 00	
1852.			
Jan. 1.	" " Messrs. Lafrenz & Fisher for case for Library.	25 50	
Feb. 19.	" " Rev'd S. C. Damon for seal and Dies purchased by him in the U. S.	25 00	
Mar. 22.	" Loaned Stephen Reynolds, Esq., for one year on Note and Mortgage.	500 00	
	Amount carried forward	$1116 15	

	Amount brought up	1116 16	
Mar 22.	To cash paid I. R. Mitchell, (Express Ag't) for carrying parcel of books from S. Fran. to Honolulu.	3 00	
Apl. 12.	" " for acknowledgement and recording Mortgage f'm S. R.	4 00	
May 28.	" " Polynesian Office for printing 500 copies of No. II, Transactions, including Binder's bill.	275 36	
June 1.	" " Cash balance on hand, c'd down	101 59	
		$1500 10	

1851.	Cr.		
Aug. 11	By cash on hand, (bro't from old acc't)		$291 62
1852.			
Jan. 21.	" " Received from the Hawaiian Treasury by order of the Minister of the Interior.		500 00
May 27.	" " Received for interest up to June 7th 1852 on Thomas Brown's Note and Mortgage.		108 48
June 1.	" " for 120 Certificates of Annual Membership at $5.		600 00
			$1500 10
1852.			
June 1.	By Cash balance bro't down.		101 59

On motion of Mr. Castle the Report of the Treasurer was accepted.

A Committee to examine the articles exhibited at the fair, and to award premiums, was appointed, consisting of Messrs. Janion, R. W. Wood, Meek, Bishop and Hopkins.

Mr. Wyllie, from the committee on CAPITAL AND BANKING, read a long and valuable report, which was on motion accepted.

R. C. Janion, Chairman of the committee on POULTRY, read a Report, which was, on motion, accepted.

A. B. Bates, Chairman of the committee on Horticulture, read a report, which, on motion, was accepted.

J. F. B. Marshall, Vice-President for Kauai, reported in regard to the agricultural state of that island, which report was accepted.

R. W. Wood, from the committee on sugar and its manufacture, read a report which was accepted.

Adjourned to the chapel at half-past 7 P. M.

Evening Session, June 1, 1852.

The Society met, according to adjournment. The exercises commenced by the singing of "Old Tubal Cain," a song of Russell's, by a select choir which was executed in a highly creditable manner, and to the evident delight of the audience.

The President then introduced to the Society E. H. Allen, Esq., who had kindly consented to deliver the Annual Address. This address which occupied 50 minutes in the delivery, was one of sterling merit, and was listened to with unabated interest by a crowded audience, embracing the elite of Honolulu, and Sandwich Island Society.

At the conclusion of the address a vote of thanks was unanimously passed by the Society, to Mr. Allen, for his able address, and a copy requested for publication in the Transactions.

The following original ode was next sung by the choir, in a most effective and spirited manner.

ROLL ON! ROLL ON!

1.

"Roll on! roll on!" proclaimed the Power,
That spake this planet into birth,
"Roll on! and beast, and bird, and flower
Shall wake to deck and bless thee, Earth."
'Twas done! with life and beauty glowing,
It lay beneath its Maker's view;
Then higher life on man bestowing,
He bade him labor, and subdue.

2.

On! on! speed on! to man was spoken,
When Eden far behind him lay;
And in the cloud was placed that token,
Which promised blessings on his way;
Which told that while the earth remaineth,
Seed-time and harvest shall endure,
And he who sows, the pledge retaineth,
That maketh his reward secure.

3.

Then on! bear on, the plough is ready,
With which to turn the waiting soil;
The torch of science now burns steady,
To light you on your chosen toil;
Then swerve not from the path before you,
But onward with unfaltering tread;
Success shall wave her banner o'er you,
And Hawaii rise, as from the dead.

On motion the thanks of the Society were voted to the choir for the valuable service they had rendered, and the happy manner in which they had added so materially to the enjoyment of the evening.

A vote of thanks was also unanimously passed, to Miss Reynolds who composed the fine original ode just sung by the choir, the appropriateness and merits of which had been so highly appreciated by the audience.

On motion, voted, to adjourn to Thursday morning, June 3rd, at 10 o'clock, at the chapel.

Honolulu, June 3d, 1852.

The Society met, according to adjournment. The minutes of the last session were read and approved.

The Society proceeded to reports of committees appointed last year.

G. Rhodes, Esq., chairman of the committee on COFFEE, read a report, which was accepted.

R. C. Wyllie, Esq., from the committee on STATISTICS, reported, at great length, which report was accepted.

Also, a report from B. Pitman, Esq. of Hilo, one of the committee, was read by Mr. Wyllie, giving a statistical account of Hilo, for the year ending May 20th, 1852. The report was accepted.

S. Reynolds, Esq. from the committee on LABOR, read a report, which was accepted. As a part of the report of this committee, a communication was read from Jas. F. B. Marshall, R. W. Wood, and R. J. Hollingsworth, which were accepted as a part of the report.

Mr. Bishop, from the committee on STATISTICS, read a report, which was accepted.

W. Newcomb, from the committee on WORMS AND OTHER INJURIOUS VERMIN, reported, and produced drawings to illustrate the subject. The report was accepted.

C. G. Hopkins, Esq. from the committee on NEAT CATTLE, read a report, making many valuable suggestions, which was accepted.

The report of the committee on HORSES was read, and accepted.

The committee on SWINE reported through P. J. Gulick, which report was accepted.

C. J. Hollingsworth, chairman of the committee on FENCES, read a report, which was accepted.

A report from the committee on the HONEY BEE was presented by Baron de Tierry, read by the President, and accepted.

On motion of J. S. Green, seconded by R. W. Wood, Resolved, That this Society petition the Legislature for the protection of such birds as are of value in devouring insects. Carried.

On motion of J. F. B. Marshall, voted that a committee of three be appointed by the chair to draft a petition to the Legislature on the subject of the preceding resolution. Dr. Newcomb, E. Whittlesey and W. H. Rice, were appointed.

The committee on WHEAT, CORN, OATS, AND OTHER GRAINS, reported through J. S. Green, which report was accepted.

Adjourned to half-past 7 o'clock, at this place.

Evening Session, June 3rd.

The Society met according to adjournment. The minutes of the last session were read and approved.

The reports of committees were called for, and Mr. Duncan read a report on the subject of insects, the prevention of their ravages, &c., which was accepted.

Mr. Bowlin, from the committee ON GARDEN SEEDS AND FRUITS, read a report, which was accepted. Mr. Montgomery from the same committee made a verbal report, principally on the subject of seeds.

Mr. J. H. Wood, from the committee on MANUFACTURES, in the absence of Mr. Weston, the chairman, made a report, which was accepted.

Dr. Newcomb, from the committee on SALT, read a report on that subject, and also embracing remarks on the pearl oyster, which was accepted.

A brief report from the committee on the VINE AND FIG, from Mr. Bailey, was read by the President, which was accepted. This report enclosed a report from Mr. Emerson, on the object of curing the fig.

Adjourned to 10 o'clock to-morrow.

June 4, 1852.

Met according to adjournment. Minutes read and approved.

E. P. Bond, from the committee on roads, reported; which report was accepted.

Mr. Torbert, from the committee on SUGAR AND ITS MANUFACTURE, read a report which was accepted.

Mr. Montgomery, Corresponding Secretary, read a report, as Secretary and Librarian, during which he read an interesting letter from J. E. Chamberlain, on the subject of Bees. The report was accepted.

The report of the committee on PREMIUMS, was then read and unanimously adopted, and is as follows:—

GENTLEMEN:—Your committee, in offering a brief summary of their observations on the various articles contributed at the meeting of June 9th, 1852, cannot help expressing a regret, to wipe away, if possible,

all future cavilings, that the duty of awarding prizes—that is to say, of deciding which were the superior specimens contributed in their different kinds, was not divided among four or more separate committees. This, therefore, must be the excuse of your committee, that, as a general thing, each member was an exhibitor, and felt himself bound to say as little as possible in regard to the specimen brought forward by himself, and articles exposed in competition with his own productions.

It happened, in consequence, that those who, from familiarity with the productions under discussion, ought to have been prominent in giving an opinion, were silent from delicacy. The amount of labor, in order to do justice to the articles contributed, was too much for one committee to perform, with benefit to the cause in hand, or satisfaction to themselves.

Your committee beg to report the following premiums as having been awarded to the following exhibitors.

SUGAR :—1st preminm to R. W. Wood, for specimens from East Maui plantation.

2d premium to A. B. Howe, Hana plantation.

3d premium to L. L. Torbert, Honuaula plantation.

SYRUP :—To L. L. Torbert, Honuaula plantation.

COFFEE :—1st premium to B. Pitman, Hilo.

2d premium to G. Rhodes, Hanalei, Kauai.

WHEAT :—To J. S. Green, Makawao, East Maui.

INDIAN CORN :—To J. S. Emerson, Waialua.

OATS :—To J. S. Green, Makawao, East Maui.

SALT :—To C. W. Vincent, Puuloa, Oahu.

ARROW ROOT :—To B. Pitman, Hilo, Hawaii.

CIGARS :—For the best 100, to J. R. Opitz, Waiawa, Kauai.

FRUITS :—For best figs, to J. Piikoi, Oahu.

For best Oranges, to A. Adams, Oahu.

For best Peaches, to J. S. Green, Maui.

For best Mangoes, A. Adams, Oahu.

For best Strawberries, to C. W. Vincent, Oahu.

For best Alligator pears, to A. Adams, Oahu.

For best Lemons, to A. Adams, Oahu.

For best Bananas, to C. Smeathman, Oahu.

For best Pine Apples, to B. Pitman, Hawaii.
For best Olives, to A. Adams, Oahu.
For best Raisins, to H. M. Whitney, Kauai.

FLOWERS :—1st premium to Mrs. Penhallow.
2d premium to Mrs. Janion.

BUTTER :—1st premium to J. Booth, Oahu.
2d premium to J. S. Emerson, Oahu.

CHEESE :—To H. M. Whitney, Waimea, Kauai.

LEATHER :—To specimen exhibited by J. H. Wood, Oahu.

SUGAR CANE :—(Best 10 sticks,) to B. Pitman, Hawaii.

TOBACCO :—(Best 2 lbs, cured,) to J. R. Opitz, Kauai.

STALLION :—(Imported,) to J. Meek, Oahu.

MARE :—(Imported,) to G. P. Judd, Oahu.

BULL :—(Imported,) to C. G. Hopkins, Oahu.

COW :—(Imported,) to C. G. Hopkins, Oahu.

STALLION :—(Native,) to J. Meek, Oahu.

GELDING :—(Native,) to J. Meek, Oahu.

MARE :—(Native,) to J. O. Dominis, Oahu.

BULL :—(Native,) to J. Meek, Oahu.

COW :—(Native,) to S. C. Damon, Oahu.

HEIFER :—(Native,) to R. Armstrong, Oahu.

OXEN :—To J. Dowsett, Oahu.

HOG :—To J. Meek, Oahu.

SOW AND PIGS :—To J. Meek, Oahu.

SHEEP :—To H. Sea, Oahu.

FOWLS :—To R. C. Janion, Oahu.

GEESE :—To J. Meek, Oahu.

DUCKS :—To G. P. Judd, Oahu.

GUINEA FOWLS :—To W. H. Rice, Oahu.

POTATOES :—(Irish,) to L. L. Torbert, Maui.

POTATOES :—(Sweet,) to R. C Janion, Oahu.

ONIONS :—To B. Pitman, Hawaii.

CARROTS :—To A. Adams, Oahu.

BEETS :—To R. C. Janion, Oahu.

TURNIPS :—To J. Montgomery, Oahu.

SQUASHES :—To W. H. Rice, Oahu.

PUMPKINS :—To C. W. Vincent, Oahu.

CABBAGE :—To R. C. Janion, Oahu.
LETTUCE :—To R. C. Janion, Oahu.
ASPARAGUS :—To G. P. Judd, Oahu.
GREEN PEAS :—To C. W. Vincent, Oahu.
BEANS :—To W. H. Rice, Oahu.
KALO :—To G. L. Kapeau, Oahu.
TOMATOES :—To C. W. Vincent, Oahu.
CUCUMBERS :—To C. W. Vincent, Oahu.

Your Committe cannot help observing, that the coffee for which the first premium was awarded was the product of a single tree ten years old, (this fact was substantiated by the evidence of several certificates,) which yielded this year the immense quantity of *forty* pounds in the parchment.

The best butter exhibited, it should be observed, was, perhaps, that made by G. Harbottle, but that gentleman not being a member of the Society the committee were unable to award the premium in his favor.

Good specimens of cocoa were produced by Mr. Pitman, of Hawaii, and P. Manini of Oahu ; others exhibited samples of the Mamee apple (indigenous to South America,) and the Feei of the Society Islands. Bread Fruit, Papaw Apples, Grapes, Granadilla and the Water Lemon, were also exhibited with other fruit, but no premiums having been offered, your committee can only mention the fact of their having been shown.

A great variety of excellent garden vegetables was exhibited by R. C. Janion, C. W. Vincent, A. Adams, W. H. Rice, and Jno. Montgomery, amongst which were several for which no premiums were offered. Several native gentlemen also produced specimens of fine melons, squashes, sage, etc., which showed that they were active in the cause of improving and adding to the productions of their native soil.

Two samples of wool were exhibited,—one by C. W. Vincent, of Oahu, and the other of better quality, by Mr. Sparke, of Hawaii, which demonstrated that a very superior quality of that article can be produced on these islands.

Of a vast number of articles shown, your committee can do no more than mention some of the names, as no prizes were offered for

those that excelled in their several kinds. Amongst them were specimens of embroidery by Mrs. Dudoit, Mrs. Crabb, Miss Corney, the Misses Judd, Mrs. Hackfeld, Mrs. J. Ladd, Mrs. Armstrong, and Mrs. Dominis; of paintings and drawings, by the Misses Judd, Miss M. C. Dimond, Miss S. E. Hall, and R. W. Andrews; of cotton cloth by Miss L. Brown; of many varieties of flowers by Mrs. Judd, Mrs. George Harris, Miss Severance, Mrs. C. R. Bishop, Mrs. Jno. Ladd, Mrs. E. H. Rogers, and many others; of gold-fish, by Messrs. Sansing & Co.; of guava jelly by Mrs. E. O. Hall, and Mrs. J. Ladd; of canary seed by E. H. Rogers; of work boxes and picture frames, made of Hawaiian woods, by Mrs. Dominis, Mrs. J. Ladd and G. S. Kenway; of rare fruit trees by Mrs. Dominis; of fine boots made of Hawaiian leather by J. H. Wood; a rotary pump by R. A. S. Wood; a lamp shade, and easy chair, by Mrs. A. B. Bates; a boquet of Artificial flowers made by Miss C. P. Armstrong; and various other articles by ladies and gentlemen. Several Chinese gentlemen added much to the show of flowers, by sending in their pots, which they cultivate with much care and success.

The imported Stallions of S. Thompson and J. Meek, and the native Bull, (Angus breed,) 18 months old, of C. G. Hopkins, were considered as superior of their kind; and the committee were divided between their merits and those of the animals to which the premiums were awarded. Had there been a premium for the best imported draft horse, the competition would have been between J. T. Waterhouse's grey, and J. Dowsett's brown, both geldings.

J. MEEK.
R. W. WOOD.
CHAS. G. HOPKINS.
CHAS. R. BISHOP.
ROBT. C. JANION.

A general conversation took place on a variety of topics, when the Society proceeded to the election of officers for the current year. Messrs. C. R. Bishop and S. G. Dwight declined a re-election. Whereupon the following persons were duly elected.

HON. WM. L. LEE :—*President.*

G. S. KENWAY, Hawaii,
BENJ. PITMAN "
L. L. TORBERT, Maui,
C. B. ANDREWS, Molokai,
S. REYNOLDS, Oahu,
J. F. B. MARSHALL, Kauai,
} *Vice Presidents.*

R. G. DAVIS, *Treasurer.*
JOHN MONTGOMERY, *Corresponding Secretary.*
EDWIN O. HALL, *Recording Secretary.*

W. NEWCOMB,
R. W. WOOD,
S. N. CASTLE,
R. C. JANION,
B. F. SNOW,
} *Executive Committee.*

The Society proceeded to the choice of the standing committees for the ensuing year.

It was Resolved,—That the committee on Statistics confine their reports to the agricultural, mechanical and commercial statistics of these islands. The following committees were then appointed :

ON POULTRY.—E. Whittlesey, *chairman*, E. H. Rogers, T. Metcalf, R. C. Janion.

ON STATISTICS.—C. R. Bishop, *chairman*, R. C. Wyllie, B. Pitman, George D. Gower, J. F. B. Marshall, Wm. Baker, A. G. Thurston.

ON HORTICULTURE.—J. Montgomery, *chairman*, Wm. Duncan, C. W. Vincent, G. P. Judd.

ON SUGAR AND ITS MANUFACTURE.—J. F. B. Marshall, *chairman*, R. W. Wood, L. L. Torbert, G. A. Lathrop, A. H. Spencer.

ON COFFEE.—B. Pitman, *chairman*, E. Bailey, G. Rhodes, P. Cumming, T. C. B. Rooke.

ON LABOR.—G. A. Lathrop, *chairman*, J. F. B. Marshall, S. Reynolds, G. Rhodes.

ON ANALYSIS OF SOILS.—W. H. Pease, *chairman*, W. Newcomb, T. C. B. Rooke.

ON WORMS AND INSECTS.—W. Newcomb, *chairman*, Wm. Duncan, J. S. Emerson.

ON ROADS.—T. Metcalf, *chairman*, Wm. Webster, E. P. Bond, G. M. Robertson.

ON AGRICULTURAL IMPLEMENTS.—R. Armstrong, *chairman*, W. H. Rice, Wm. Duncan, E. H. Rogers.

ON NEAT CATTLE.—Robert Moffat, *chairman*, P. J. Gulick, T. Cummings, G. S. Kenway, S. C. Damon.

ON HORSES.—G. P. Judd, *chairman*, T. Cummings, J. O. Dominis, J. I. Dowsett, S. Thompson.

ON SHEEP.—J. Meek, *chairman*, H. Sea, T. Cummings, J. I. Dowsett, C. G. Hopkins.

ON SWINE.—R. J. Hollingsworth, *chairman*, A. Paki, J. Meek.

ON SEASONS.—E. G. Beckwith, *chairman*, T. Coan, J. S. Green, J. S. Emerson, G. B. Rowell.

ON FENCES.—R. G. Davis, *chairman*, E. Bailey, Wm. Miller, L. L. Torbert, R. J. Hollingsworth.

ON TREES.—T. E. Taylor, *chairman*, Wm. Duncan, E. Bailey, G. P. Judd, B. F. Hardy.

ON GARDEN SEEDS AND FRUITS.—S. C. Damon, *chairman*, T. Cleghorn, Wm. Duncan, R. H. Bowlin, H. Kinney.

ON PRODUCING SEED FROM SUGAR CANE.—E. P. Bond, *chairman*, D. Baldwin, G. A. Lathrop, B. Pitman.

ON THE HONEY BEE.—Baron de Thierry, *chairman*, R. C. Janion, J. Montgomery, H. A. Pierce.

ON BIRDS.—L. Severance, *chairman*, W. Newcomb, A. B. Bates, E. Whittlesey, R. Moffat, J. Ladd.

ON LEATHER AND TANNING.—J. Hardy, *chairman*, J. H. Wood, B. Pitman.

ON MANUFACTURES.—R. A. S. Wood, *chairman*, J. H. Wood, R. W. Wood, J. F. B. Marshall.

ON GRAINS.—W. H. Rice, *chairman*, J. S. Emerson, J. S. Green, T. E. Taylor.

ON CAPITAL AND BANKING.—L. Severance, *chairman*, E. H. Allen, S. N. Castle, R. C. Wyllie, G. P. Judd, B. F. Snow.

ON BUTTER AND CHEESE—T. Brown, *chairman*, J. S. Emerson, J. P. Parker, J. Booth.

ON THE VINE AND FIG.—T. E. Taylor, *chairman*, R. W. Wood, H. M. Whitney, H. Rhodes, D. Baldwin.

On Tobacco.—R. C. Janion, *chairman*, J. R. Opitz, Wm. Baker, S. Reynolds, D. Adams, C. W. Vincent, A. B. Bates, D. Baldwin.

On Salt.—C. W. Vincent, *chairman*, W. Newcomb, E. W. Clark, A. Bishop.

On Salting Beef.—W. H. Rice, *chairman*, T. Brown, S. Reynolds, G. S. Kenway, E. Miner.

On the Burr.—S. Reynolds, *chairman*, Wm. Duncan, R. C. Janion, J. S. Emerson, J. Piikoi.

On Kalo and Potatoes.—L. L. Torbert, *chairman*, C. Smeathman, Jas. Robinson, Kaauwai, G. L. Kapeau.

On Preparing an Address to the Hawaiians.—J. S. Green, *chairman*, L. Andrews, R. Armstrong.

On motion, voted that the board of managers be instructed to offer a premium for the best manual on Agriculture in the native language, not exceeding 50 pages.

On motion, voted that the following gentlemen be requested to use their efforts to form local Societies, auxiliary to this Society, on their respective islands, viz :—On the island of Hawaii, T. Coan, L. Lyons, E. Bond, A. Thurston, J. D. Paris, H. Kinney. On Maui, E. Whittlesey, J. S. Green, D. T. Conde, D. Baldwin. On Molokai, C. B. Andrews. On Oahu, W. H. Rice, L. Smith, A. Bishop, J. S. Emerson, B. W. Parker. On Kauai, G. B. Rowell, J. W. Smith, E. P. Bond, E. Johnson.

Committee on Printing.—T. E. Taylor, S. C. Damon, E. O. Hall, H. M. Whitney.

A vote of thanks was passed to Mr. Damon for the use of the Chapel, also to the President for the able and satisfactory manner in which he had discharged the duties of his office.

On motion of R. W. Wood, it was Resolved,—That a vote of thanks be presented to the Hawaiian Government for the use of the new Court House during the late exhibition, and for its friendly cooperation in promoting the interests of our Society.

Resolved, That the thanks of the Society be presented to all those Ladies who, by their contributions and presence, added so much to the pleasure of our exhibition.

On motion, adjourned to the first Tuesday in June, 1853.

ADDRESS

Delivered by the Hon. E. H. Allen.

Mr. President and Gentlemen of the Royal Hawaiian Agricultural Society :—

How beautiful the idea that here, in mid-ocean, there should be an assembly convened for the purpose of giving an impulse to the improvement of that noble art which is the parent of all others ; that here a Society should have arisen, the transactions of which would be creditable to far older states, where but a few years ago no art of civilised life was cultivated. It is an illustration of the Anglo-Saxon Mission in its progress round the globe, that it should pause here for a day, and make a garden in the sea, which should attract and cheer, and cherish all who are voyaging on its expansive waters. Here is a resting place for the dove, from which he will go forth carrying light and knowledge to the distant Isles, and to the still remote Continent, of the increased facilities of cultivating that art which is so productive of comfort and refinement at home, and commerce abroad. It is not for yourselves alone that you are acting, in combining and disseminating agricultural knowledge, important as that may be, but it is for civilization. Its influence is not limited like the Society of a single county, but it will be an example and an impulse to this noble art in the Pacific Isles, which if followed, will be more valuable to them, than all the sands on their shores, even were they gold. It is somewhat singular, in reviewing the history of states, that navigation, commerce, and manufactures should have commanded more attention, more encouragement, more incentives to genius and enterprise than the parent of them all. What a garden the settled portions of the earth would be made, if genius was stimulated in the investigation of the principles of culture, as it has been in the mechanic arts. In agriculture you have no magnetic telegraph, but you must make one for all other isles, by making this group a garden. Neither have you the mariners' compass, but you have the north star and you must invent one. Agriculture has not until recently inspired its votaries, but on they went, ploughing with a stick, and harrowing with a bush, and even these rude implements were drawn by the tail or the horns of its unfortunate victims. But mechanical genius inspired by the rich lux-

ury of invention, has given its handmaid a plough that developes riches which for ages have laid dormant, and a harrow that mellows and enriches, and a yoke that is a mercy to the willing ox. The whole catalogue of agricultural machinery is of recent date and so is chemistry as applied to agriculture, and its advance may be said to have just begun. You then live, so far, at least, as your favorite pursuit is concerned, at an interesting period in the world's history. Invention has not ceased to aid you and will not to the end of time. Even the last year has been productive of improvements in the growth and manufacture of sugar. The cotton gin has saved from oppressive toil, has imparted value to millions of acres, useless before, and given comfort and ornament to a world. Hitherto it has not been the man that hoed and ploughed that has done the most for his art, but it has been him who has invented the implements by which you could work the soil, and manufacture its products, and of the Chemist who has informed you of the composition of soils, and what would enrich them, as well as the plants adapted to them. But now your time has come to make the richest culture, and the richest production from the smallest amount of land, and labor. The materials are furnished, the principles of science are now to be applied to your art. For ages the son followed the system of the father, and in a large portion of the world, it is the same now, but this inaction and lazy principle of imitation is giving way to the intellectual energy of the age. The principle of action for all men to consider is, the amount of production from a given quantity of land, for the least labor, and expense. I do not deny but what the system of culture should be modified by the density of population, and the value of land. The cheap lands of the United States will enable the farmer to let a portion lie fallow, when in England, from its high price, it must produce its annual return, and hence a more accurate attention to the best system of culture. But in the United States it is admitted that great loss has been incurred by taking the cream of the soil, and leaving it in its poverty. It is equally an admitted truth that too much land has been run over, as the saying is. Concentrate your culture to a limited space and you will raise more with the same means. It requires as much labor to raise a small crop on poor land as a great crop on rich. To this principle in a given place, good judgment and experiment are wanted to decide. But as a general

truth, applicable to all countries, cultivate thoroughly, and remunerate the soil for what you take from it.

Agriculture has not been made as interesting as it should have been. It has been considered a mere drudgery, whereas it is capable of imparting more physical and intellectual enjoyment than any other pursuit. Air and exercise are necessary for health. Nature is full of cheerfulness and all her votaries participate of it. No strife, or conflicts, or envyings ever disturb them. They have no warfare but to subdue the earth, and make the elements subject to its culture. Consider your plantation a laboratory, where the mind can be interested by the application of science to the arts, and it is made so practical now that no one need be deterred from listening to its teachings. Agriculture wants more application of mind, and this only it demands, to make it the favorite pursuit of mankind. Honor, renown and popular favor have been won on other fields, left bleaching with the bones of the victims of a battle, or rendered barren by the iron heel of a tyrant's war-horse.

"What millions died to make a Cæsar great!"

It is not strange that we linger around these scenes of conflict with admiration, when liberty and the rights of man were staked on the issue; but for the opposite purpose it is a scene of woe and sorrow to any reflecting mind. But the day has come when those who enrich a field and make it bloom with a product, and those too who lighten the burdens of labor, and make it more intelligent, shall have their reward.

The necessity of success in any pursuit is *to think*. *This is the want*. The man who deliberates well will usually succeed, but we go blundering along through life, guided and controlled by its circumstances, wafted on any coral reef or sand-bar that intercepts our thoughtless course. If your lands are improved by deeper ploughing, your minds are by deeper thinking. The mechanic has furnished you with the plow. The man of science has instructed you how to think and to reason. If the land requires ammonia, the mind requires more discipline; if the soil requires more general drainage, the mind requires a more thorough cleansing from all impurities. Let the field be the laboratory and the mind the instrument directing the experiments, and both will be cultivated.

But the practical man will say "How can I do this? I am not at

home in the study. I am not learned in the sciences." Let him get Johnston's lectures on the application of Chemistry and Geology to Agriculture, and try the experiments that are applicable to his situation; also study Leibig, upon Organic Chemistry applied to Agriculture. Skinner's Journal of Agriculture, the Farmer's Book, the Cultivator, Coleman's Agricultural Tour in Europe, are, as you well know, valuable and interesting and ought to be well studied.

The best periodicals should be taken by your society. You should have a vehicle of information passing round the group, leaving its periodical intelligence of all the improvements. In the United States, there is a strong effort making for an improved agricultural education, and it is remarkable that it did not earlier arrest the attention of the public mind, especially when you consider how far above all others in numbers are those who are engaged in its pursuits. By the last statistics that I have seen there are of the learned professions in the U. States 65,225; Internal navigation 33,076; in navigating the ocean 56,021; in manufactures 791,749; in commerce 117,697; and in agriculture 3,719,951. It not only affords subsistence to every class, but most of the elements of employment, and it is estimated that they pay four-fifths of the taxes. Yet the farmers, with the power in that country, have not established for themselves the schools which they have contributed to sustain for other pursuits.

The colleges, schools for the army and navy, have been liberally sustained, and now agricultural schools are being established, which will disseminate a general knowledge of science in its most plain and practical application. You will derive benefit from the writings of foreigners, yet it requires a good degree of knowledge in the application of their teaching to your situation. Difference of climate, and soil, and production, require material modifications of practice. But in the transactions of your association you have already shown the determination and ability to disseminate a sound practical knowledge of your pursuits. This society can not fail to be of the highest benefit. It animates the minds of all its members, and diffuses through the community intelligence and taste in your pursuits. The age is full of intelligence; mind is active in every art of life; science is not confined to the University, or to the royal Societies. "Its portals are no longer guarded by a dark phraseology, which to the multitude is a

foreign tongue." The groves of Academus are far more numerous in many states, than the groves of Oranges in the Pacific Isles. The highest interest of life is to labor in the development of the resources of nature, and by her laws to cultivate and adorn the earth.

It has been thought that there was no other pursuit of such perfect combination for the development of the intellectual, the moral, and the physical man. It is a laboratory in which the chemist will revel, and when this labor is rewarded by an increased production, it will give him an encouragement, higher and better, than high prices without it. It ensures success, where a blundering husbandry would fail. It has no false pretence, no injurious device, but it is the study of Nature's law leading the mind to Nature's God.

There ought to be an agricultural literature. Other pursuits have their libraries, reading rooms, and lectures. The commercial man is watching with an eager eye for the best markets—trying to introduce new crops, and new manufactures. The mechanic has sleepless nights in his efforts at invention, and richly enjoys a discovery that makes the laws of nature subservient to useful purposes.

There should be an agricultural survey of these Islands. It would aid you more than all other means of knowledge, if made by a scientific man. The nature and qualities of your soils should be carefully analyzed—the best means to sustain their fertility, and the most productive manner of culture. It saves, to a great extent, individual experiment, and imparts to you a confidence and strength in your mode of operation. Every doubt on every farm could be solved: regarding its power of production, and the combinations that make that power. You must, to be successful, understand the component parts of the soil, and the action of different plants upon it. We want such a teacher in agriculture as Bowditch is on the unknown seas. The sailor feels a confidence in *his* principles as much as he does in the north star itself.

Agriculture has its laws, as well as navigation—and although not to know them is not fatal to life, as it may be in the other, it makes a stupid, lingering existence unworthy of an immortal mind. The rotation of crops is an interesting study. One plant exhausts certain properties of the soil—another very different. Some for example take from the soil silecia so important to the grasses and cane plants—

others for the potash they consume—and still others for the lime. Vegetables will consume certain elements—corn and tobacco very different. Now the farmer should know the elements which certain plants take up, and then plant on the soil that contains them. There are certain elements common to all, and the success depends in adapting the seed to the properties of the soil. This saves the necessity of letting the land lie fallow. The land will recover to a great degree from the exhaustion of one plant, while it sustains another. The mechanic works by certain laws, as accurately defined as mathematics can make them. The farmer can calculate by equally definite laws modified occasionally by extraordinary phenomena; and the culture, which by these laws you will give the soil, will not be equalled by that which the mind receives by their study. But I see no means by which the great purpose can be accomplished except by an agricultural survey—by some one like Johnson of England, or Jackson of the United States. This is an appropriate place to try the experiment of devoting your whole energies to peaceful pursuits. You have no army, or navy to provide for—no fortifications to build or repair. Let your motto be, "Let us adorn our beautiful islands by the richest culture."

In the past year you have gained much in the manufacture of sugar by the application of the centrifugal separator. It is this improved process which alone sustains a remunerative price in a general market. Let others introduce it, and you omit to do it—and you would be under-sold in your own market. This is an illustration of the necessity of keeping up with the world in improvements, if you expect to compete in its markets. The effect of machinery is to perform the work better, and to lessen the severity of labor—although it frequently produces occasion for it in new and untried fields. The steam engine, so potent for usefulness and with all its power of labor, has still been the cause of introducing as much perhaps as it has saved—but the comforts of life have been greatly promoted, and indeed, the great principles of civilization have been very much extended.

It is a comforting reflection that machinery performs the severest labor—not that it lessens its demand. Other wants arise when the present are supplied. The coal-mines would probably have rested in their beds till consumed by the great fire, if the steam engine had not been made.

The rail-road, if not unknown, would have been limited without it, there would have been no competing power with wind and tide. The wants of civilization increase in the ratio of the ability to supply them. A century ago an American clock would have been an article of extravagant luxury: now the richest manufacture graces every mantle; so on, still on, is the motto of the world,—every improvement creates more comforts, and more wants. What has changed the condition of the world from what it was fifty short years ago?—It is mind, invention, intellectual power. Labor on ordinary principles could not have done it, even if all the sinews of man had been sacrificed.

The time will soon come when you will need to devote attention to the making of manures, and in their application. It is a proverb with the Flemish farmer, that manure is the god of agriculture, and with the Scottish farmer, that "muck (manure) is the mother of the meal chest."

In many countries attention to this most important subject is usually too long neglected. The virgin soil will produce good crops for a series of years—but the earlier the debt due the soil is paid, the less will be compound interest. I am told that in the Island of Barbadoes which produces the largest amount of sugar to the acre, perhaps, of any on the Globe, that the most judicious, and careful attention has been paid to the manufacture, and application of manures, and that the system of agriculture as practised there is the result of science, and careful experience—and that the business of sugar-growing has been very profitable, and of course the plantations are in demand at high prices; and show, no doubt, that a correspondence with some of the intelligent men would be of great practical benefit. The Consul of the United States at that island gave me a brief description of their pre-eminent success; and as most of the books and papers on agriculture are especially applicable to the products of more northern climates, I respectfully suggest whether a committee of correspondence with gentlemen residing in the tropics would not procure most valuable information as applicable to the cultivation of sugar, coffee, and the tropical fruits as of the animals most profitable to the mountain ranges. Knowledge acquired by the studies and experience of others may save you great loss, and disappointment.

Your agriculture is more interesting than in older countries where

the precepts and practice have been so fully tested. Here you can learn the science, but the application is not written and your own judgment must direct it. It requires more examination, more vigilance, and hence will quicken the powers, and excite a deep interest—and although we have the perpetual warmth of summer, yet the seasons here are to be especially regarded. The principle of the adage, "hoe cabbages while the dew is on, and make hay while the sun shines" is as applicable here as where those products are extensively raised. It is said the sugar-cane is an exception, but as a general rule I have no doubt that attention to the time of planting as in setting out trees, is as important here as in countries marked by a decisive change of seasons. This can only be ascertained by careful observation, and hence if every farmer will record his own experience, and have it published, this branch of information would soon be most satisfactorily ascertained. It is important in reference to temperature, to moisture and to insects. Your "transactions" will be a perfect text-book on all these important matters. To dodge the grub worm and the caterpillar is essential—and to know accurately how to prepare the seed, and when to plant, in order to avoid their destructive attacks is among the important subjects of inquiry.

I hope you will bring within your inquiry the subject of fruit trees. There is now in the United States a Society called "The American Pomological Congress of fruit growers." It is a national Society, and doing immense service. The associating principle is the most active, and it seems to be necessary to accomplish any general good. Trees on these islands combine beauty, profit, comfort. The coffee, the fig, the breadfruit, the tamarind, and the orange afford a handsome remuneration, and are an ornament and a refreshing shade around your dwellings. Every one who has a rood of land can cultivate some of these trees, and it would add immensely to the revenue of the islands, if they attracted general attention, although small, for each individual.

You are better situated to command the markets of the American coast in all the tropical fruits than any other islands in the Pacific. Your proximity gives you a decided advantage, and when the day of steam boats arrives, and you see them passing along to your wharves with hundreds of people bound to the Oriental world, your fruits will have a home market, enriching you for all your labor. Fruits and

flowers will be equal to a golden mine. This culture is appropriate for woman at least to ornament her own grounds, and furnish her table with this luxury. There is a beautiful fitness for woman in the garden amid flowers and fruits, especially when the product of her own direction. It is better exercise than riding on horseback, at least for a change ; for the mind is as pleasurably and more usefully employed. Honolulu can be made the city of gardens, water is the only want, and I have no doubt that as soon as the rights of all parties can be fully protected, the beautiful stream from Nuuanu will be conducted over this whole plain, fertilizing and enriching till its productions and its beauty will be the attraction of every traveller. The day has passed when water will run idly to the ocean. It must either furnish power for machinery or at least leave its fertilizing qualities on the earth. There are numerous beautiful vallies on the group which need the ornament of the fruit tree, and the vine, and the good people had better be preparing them, for in a few days you will see the inter-island steamer visiting every inlet to purchase their fruit.

Remember, that to make a rich return of fruits, the soil around the trees must be well supplied with the requisite manure, they must be well fed. Montreal is in latitude 45° north, and is distinguished for good fruit, and it arises from its limestone formation. The root of the tree wants a large, soft bed. How can you expect a tree to grow, unless it has sympathy with the soil, and "how can you expect that, unless the *heart* of the soil is moved."

In Florida the orange has been cultivated with success, but there has been an occasional frost, as in 1845, which did great injury. It is estimated that fifty good orange trees will produce at least $1000,—$20 per tree—sometimes twice that amount. In the United States, fruit has paid better than any other product of the farm ; and I have no doubt it would here, but the obstacle is that it requires so much time to bring the trees to bearing, that the impatient American can not give so long a credit. But I have no doubt that every planter had better appropriate a few acres for fruit growing, even if he is obliged to purchase the iron fencing. Naples and the Azores have a volcanic origin, and their mountain slopes are planted entirely with oranges and lemons. The olive tree was in high repute with the Romans. Poets have sung its praises—Neptune smote the earth with

his trident, and the war-horse sprang forth. Minerva caused the peaceful olive tree to sprout from the ground—and to whom do you suppose was awarded the palm of victory, by the twelve divinities, who sat in judgment—to Minerva or Neptune ? to the goddess, of course ; and the same partiality has continued in all gallant nations. Mr. Jefferson urged its introduction into the northern portions of the United States. He says "that it is the highest gift of heaven, I can scarcely except bread." It is singular that in the northern portion of the United States fruit has received the most attention. In sending to Amoy for Coolies, you had better include some fruit trees—such as the camphor, the cassia, and you will find it advantageous to import a variety of trees as you have opportunity.

The introduction of Cooly labor is as yet an experiment, but a very important one. It promises well, and its success depends on the judicious management, and comfortable treatment they may receive. It is an entire change—in language, manners, dress, modes of living, and of doing ; and your own good sense will teach you to forbear, and while it requires patience on your part, it can be no less trying to them untaught as they are. You must have sympathy with honest labor. It is not enough that you fulfil the contract to the letter, but the relation to them should be parental—mind always governs—and where there is a drop of the Anglo Saxon blood it is sure to rule. This Chinese race next to our own are destined to figure in the drama of the Pacific ; and I regret that the authorities of California should undertake to make any discrimination between them, and other foreigners. They are industrious, economical, and careful, filling a space for which our people are not adapted. That they can be made useful on the continent and here, there can be no doubt, and to accomplish this the only sure way is so far as compatible, to exercise a parental control over them. They should not be left to the care of indiscreet agents. They will obey one master cheerfully, more they dislike ; not differing in this particular from all the rest of the world. It is an interesting combination of the ancient nation, with the new. In reflecting on the probable destiny of the Pacific, the mind is dazzled and almost overwhelmed ;—with the American Continent on one side, with a country full of resources, and a portion at least being developed by a people of enterprise—and on the other with India, China, Japan, and

Russia, rich beyond compare in the precious metals, and in all the manufactures and arts attractive to our people—and on the south backed by a continent, sustained and controled by a powerful and enlightened government which is destined, especially if its rich mines continue to yield abundantly, to attract very soon a large European population. Added to these empires, there are myriads of fertile islands convenient for the navigation, which is so rapidly increasing between them. But your situation, above all others, has this advantage. It is a sort of half way house of this great sea—no matter whether vessels are bound from the golden shores of California to the rich warehouses of China—from the rising state of Australia, and the fertile isles of the Pacific to the Coast, this will be the place of supply, and of trade, if art and industry will accomplish what nature has invited you to do, this great prize of trade may be yours, but your ambition must be something more than to have it a calling place for wood, water, and vegetables. Let your Sandwich Island sugar, coffee, tobacco, and fruits and wool be known in the markets of the world, and commerce and navigation are sure to be attracted here. The age requires of all governments an enlarged and liberal policy, conducive to the prosperity of the whole people. Attract navigation by light expenses, and aid every enterprise calculated to enrich the people, even if it does not the government. In this age nature herself meets a competitor in art. It does not follow that superior natural advantages unimproved will triumph over those inferior, when science, art, and enterprise are in aid of the latter ; and if you expect to reap the harvest that the national laws would indicate, you must be up to the demands of the age. In the history of agriculturists few, if any, are worthy of more credit for intelligence and enterprise than the late Earl of Leicester. He inherited a large estate, but of its poverty it was said, "That there were always two rabbits contending for one blade of grass." He offered it at 2s. 6d. per acre, but without success, and he borrowed the money to improve it ; and in a sketch of it some years since it appeared that he had 345 acres of grain cut, carted and stocked in six days, and he also had 450 acres of turnips and mangel wurzel, in the highest cultivation. Science and system, with practical knowledge must have been exercised in producing such results on an impoverished estate. Gen. Washington was one of the best farmers we ever had in

our country, and as you visit the beautiful Mount Vernon, on the fertile banks of the Potomac, you will see the vestiges of his taste and industry. History has found many of its noblest subjects, who preferred the field of culture to the field of battle, although the bravest and ablest when there.

It has been considered a great desideratum in our country from the days of Gen. Washington to the present, to have a "home department of agriculture," established and sustained by the Government, and the head of it to be one of the Cabinet. His views on this subject are characterized by the same enlightened liberality and forecaste, as upon every other subject to which his mind was applied. "Among the means," said he "which have been employed to this end, none have been attended with greater success than the establishment of boards, composed of proper characters, charged with collecting and diffusing, and enabled by premiums and small pecuniary aid, to encourage and assist a spirit of discovery and improvement, by stimulating to enterprise and experiment, and by drawing to a common centre the results every where, of individual skill and observation, and by spreading them thence over the whole nation. Experience has accordingly shown that they are very cheap instruments of immense national benefit." This Society, in some degree at least, will accomplish the same purpose. Indeed if all the suggestions incorporated in the several reports are analysed and judiciously practised upon, I have no doubt there will be pre-eminent success in the different branches of agriculture. And I trust the same gentlemen will continue to give their views from year to year, and induce every new comer to do the same. This will distribute throughout the group many valuable suggestions of practice. This is the more requisite from the fact that there are few agricultural publications suited to the soil, climate, and culture of the products here. In the application of science to the arts you must be your own teachers for the present, with less aids than in older countries.

I think I have noticed in some minds a doubt about the success of planting here. That you have suffered by the drought in some sections is nothing more than what all planters in all countries have done. Cotton, corn, and potatoes are sometimes severely injured, but it is not a cause of discouragement.

Louisiana suffers by frost, so that there is a necessity for planting every year. An intelligent writer, and practical sugar grower in that state says:—"Thorough draining and subsoil ploughing is being rapidly introduced into the British West Indies, and it has proved as beneficial there as in Europe, so much so that by the present mode of cultivation the average of ratoons and plants is seldom two thousand pounds per acre. It is confidently believed that in lands thoroughly drained and subsoiled the average will be 5000 lbs. per acre. I have no doubt of it, and when that system is introduced here, the produce of a depth of sixteen inches of dry alluvial soil cannot but be productive. Nobody knows to what size cane can be made to grow, and how much sugar it can yield." Ploughing has not generally been to a greater depth than six inches and they have yielded "*disintegrated alkalies*" sufficient for cane crops for years; why will not the next six inches afford as good production if brought to the air, and well cultivated. The history of subsoil ploughing most fully shows its value in all situations, but when it requires drainage it is frequently too expensive. But here you are not under this necessity which is the great expense and drawback in Louisiana. That your crop may be made larger by this process there can be no doubt.

In reference to the market, experience has shown that there will always be a time in the twelve months when your products will command a remunerating price. You can supply California quicker than any other country, and this is a material point. You have cheap labor, cheap land, and a genial climate. You want more capital, which could be induced here, only convince the people abroad that it would be safe. You cannot expect men to come here and establish a permanent business, who have large means at home. The older portions of the country have too many attractions, so in order to secure the enterprising man, you must offer him inducements. To the planter, temporary loans are important in securing and excharging his crop, and he should not be subject to the usurer. A well regulated bank based on the precious metals would furnish all the facilities wanted here.

This subject has been under the consideration of an able committee, the chairman of which is a high officer in government, one who has been distinguished for his ability, and industry in business affairs, and whose whole powers are devoted to the prosperity and honor of this

kingdom, and who, I am informed has given an able report, otherwise I might detain you with a few practical remarks on this subject.

I do not believe in a hot-bed principle, but I do believe in having all the necessary machinery with all the modern improvements, for the success of any business. You must demonstrate that gold, or its equivalent can be gathered from these mountains and vallies, and you will at least have more of the universal Yankee nation; still the appearance of affairs is, at this moment, stupid indeed, but the world is moving on, and with courage, and with hope, all will be well again. Let us learn "to labor and to wait." But labor we must, or this city may go back to a fishing town, instead of its being occupied by a wealthy and refined people. You must remember that the arable land bears an unequal proportion to the whole; estimated variously from 1-5th to 1-8th. Now it is very evident that the richest culture must be applied to it. What then will you do with the vast amount of mountain land? Can you do better than to cover it with bleating herds and cheerful shepherds? The golden fleece is as good as the golden ore, and why not gather it? While the former has certainty, the latter is hidden beneath the earth, and its development frequently requires a waste of health which its glittering treasure cannot restore. The expense of producing wool in the southern portion of the United States is but eight cents per pound, while in the north it is twenty-seven cents, and strange to tell, it is but recently that the attention of the South has been directed to it. I am satisfied that it is a staple that should demand your attention. The temperature and hard soil of the mountain is healthful to the sheep and you have the green herbage for the whole year; while in northern countries it requires the labor of the summer to supply food for the winter, and yet in these very countries this husbandry is profitable. It is clearly proved that the south produces a larger and finer staple.

Send to Sydney for the best breed, and put your shepherds on these mountains with their flocks. They are better than fences. And you cannot well build these expensive fences, till you have something for market to pay for them. And if it is contended that you cannot have sheep until you have fences, it is equally clear that you cannot have fences until you have sheep. This state of affairs reminds me of a remark of a mountaineer who resided near one of those lofty mountains

in the north, which for months wears its white mantel to the sky, on being asked when it would be warmer, he replied :—"When the snow from the mountains has melted away." "And when will that be ?" said his neighbor. "Why, when it is warmer weather, to be sure." Instead of sending to England for the iron fence, or to the United States for lumber for the same, plant the Osage Orange, and in five years you will have a hedge, hardy and impregnable.

There is every inducement to cheer you in the course of improvement. You have prospective markets greater, far greator, than your prospective products. And this will continue, although you make every field wave with luxuriant cane, and wheat ; and every valley ornamented with the burdened fruit tree, and perfumed with the cassia, and the camphor, and the various flowers of your clime. Let there be one paradise, one oasis in this desert of waters. Nature has given you a healthful climate ; no miasma, no desolating fever ; and I have no doubt of the fact that the European race can do more work here in twelve months than in their own native land ; for the reason, that here there is no long winter to pass without employment, and labor here, as there, is invigorating. The navigators will not visit your harbors for your mountain water and a few vegetables only, but *will* seek your burdened warehouses, your teeming vallies, and your mountains vocal with flocks and herds, to supply the wants of a population on the western coast of the United States, which has increased and will increase faster, by a thousand fold, than any colony in the history of the world. You now supply their wants only to a limited extent. You may give them a cup of coffee for a week, and sugar to sweeten it ; but you seldom ornament their fruit dishes with the orange and the grape. The eye of *the world* is directed to the Pacific. Every steamer is crowded with efficient, intelligent emigrants from the United States and Europe, and Asia is already beginning to pour in from her laboring millions those who will help on the unprecedented growth of this rich empire. Remember that a year there makes the change of a generation in any other country. And have you been preparing yourselves to profit by this great advance in the settlement of that country ? It is no time to be depressed ; "on, still on," should be your motto. "But we have no means," say you. Well, command them. Combine your influence, get the government to aid

you by its liberal measures. And can you seriously entertain the belief that the 12 per cent will not induce some of these Anglo-Saxons, in their adventurous voyage around the globe, to pause here and drive a bargain with you *which shall at least pay their expenses.* You want more men, more means, and you can offer profitable inducements. You must not rest on your oars, wafted as the gentle waters may take you. Intelligence and enterprise can alone command success. Linger not too long under the beautiful shade of the tamarind, the bread-fruit, or the orange, fanned by the balmy breeze of the mountain or the sea. Take not the flattering unction to your soul that a tropical clime is an apology for indolence. Why not make one grand effort to advance the arts of civilization higher, nobler, purer, than any where else? Your physical advantages are ample for this purpose. In religious and moral teachings the foundation of your nation is securely laid; for it rests on the eternal principles of the bible, which will last after the pillared firmament shall have crumbled and fallen into chaos. Education too is progressing, and I hope that the youth of this nation will be taught to know *something of the earth*, which sustains them. It is for you to develope the resources of wealth, so that institutions of learning, and benevolence can be established; the beautiful garden, perfuming the air, cultivated; and all the other arts which adorn the characters and manners of a people. One would have supposed that the mother of all the arts would have attracted the first attention everywhere, but, perhaps for wise purposes, it was postponed till genius, cultivated by every art and every science, would bring her richest treasures to the richest subject. And with all these treasures of earth at home, let your islands be as the rock of the Pilgrims in the Pacific, upon which a light will go up to the sky, to cheer and animate every heart, on the shores washed by its moving waters.

ON CAPITAL AND BANKING.

READ BEFORE THE ROYAL HAWAIIAN AGRICULTURAL SOCIETY, ON TUESDAY, JUNE 1, 1852, BY R. C. WYLLIE, ESQ.

When I had the honor to address you, at one one of your meetings last year, I stated my fears that a severe crisis in the money market was approaching, and that some of your number would have to succumb under its pressure, from the want of that Banking accommodation, which, in other countries, enables the man of enterprise and good character to command cash, so long as he can give good security for it. Unfortunately, my predictions have proved too true. Since that period, several industrious and well deserving men, largely engaged in planting, have been unable to meet their liabilities, though possessed of assets greatly exceeding the amount of those engagements. As the best preventitive of such evils, in the interest of the planters, I suggested to the meeting, the urgent necessity of establishing a Bank in Honolulu, with branches in the principal islands. The idea was so far entertained that a committee was appointed to enquire into the subject of capital and the establishment of a Bank of deposit and discount. Mr. Severance, Mr. Bates, Mr. Castle, Mr. Makee, and I were appointed to from that committee. All these gentlemen being from the United States, are better qualified than I am to show you how Banking has promoted its agriculture generally, but more particularly in its two great staples of Cotton and Tobacco. They can show you also the great evils arising from banking when it departs from those true and correct principles by which it ought to be regulated, and which, since 1836, have been more generally and severely felt in the United States than perhaps any other country.

It must have been visible to every man of reflection, several years ago, that these islands had arrived at that stage, when a more abundant supply of capital and labor was indispensable to their prosperity. I called the attention of the King's Government to this important subject in 1847, laying down three fundamental elements as essential to our progress, viz :—*Cheap land, cheap money and cheap labor.* Providence has given us the great advantages of a productive soil, a genial and healthy climate, an exemption from droughts and hurricanes and a proximity to markets capable of consuming more than our surplus produce. But all these natural advantages we will lose if from the

dearness of land, capital, or labor, we cannot place our produce in those markets cheaper, or at least as cheap, as other countries producing the same commodities. At the period referred to, (1847), several enterprizing individuals were going deeply into plantations, and, it appeared to me, without due regard to those most important considerations. It is altogether impossible that our agriculture can flourish through the mere consumption of our scanty population. Our planters must look to foreign consumers ; but they will look in vain, unless they can supply them with produce as good, and as cheap as any one else. With the experience of late years, I believe no one will controvert these positions ; but they were not foreseen in 1847, and hence the suggestions which I have alluded to, founded on the conviction that without an improved agriculture, the islands could never prosper, and that, agriculture could not exist, except in compatibility with remunerative profits to those who engage in it.

Will any one tell me that the planters on these islands can look to anything but certain ruin, with labor at 50 cts per day, and money at 3 per cent per month ? To avert that fatal consequence both to individuals and to the nation, I can conceive of no expedient equal to the establishment of a Bank. As such an institution would be a great novelty in this young Kingdom, it may not be out of place for me to explain, here, a few of the advantages which are believed to flow from Banking in older and more advanced communities.

1. A Bank, *where there is an adequate police and military force, under proper subordination*, affords a place of security for the deposit and safe-keeping of money. It is much more easy to render one building strong and secure for such a purpose, than to fortify and guard the house of every merchant and private capitalist. Every one who has had the charge of large sums of money knows the great anxiety that the responsibility creates. That was my lot in 1826, as may be seen by referring to page 441 of the second volume of Ward's History of Mexico. I had then seldom less than $500,000 in bars of silver and *oroche** ingots of gold and coin, under my charge. The whole deposit was in my bed-room, where doubtful of the fidelity of clerks and servants, I barricaded myself in, every night, with sufficient fire-arms to fire 23 shots without reloading. Such was the life that I led for five

* Silver and gold combined.

years, in health and sickness, without ever allowing any one to sleep in the same room with me, except a young man, WILLIAM MONEY, (late of Los Angeles, in California,) during some months of severe intermittent fever. During all that time it would have been an immense relief to me to have been able to deposit the funds of FLETES & WYLLIE, in such a place of safety as a Bank.

What was my case from 1825 to 1830 in the "Presidio of Mazatlan," is more or less the case of every merchant, now, in Honolulu.

2. A Bank as above described affords another great advantage as a place of safe deposit for jewels, plate, bills, valuable deeds and other papers. Banks usually afford such facilities to customers, even without excepting the Bank of England. Any one who will take the trouble of calling at my office, can see the identical box that I was allowed to keep in that bank. To escape the damage of fire, it is usual in London for solicitors and others who have valuable papers, to deposit them in the vaults of some bank, during the night, and to send for them in the morning.

3. A bank by allowing interest to depositors, draws into it the various small sums of money which individuals can spare from their necessary expenses, and which, otherwise, would remain unproductive in their hands. These small sums, accumulate, in the bank, in large amounts which are employed in discounts and other facilities to trade and commerce. Every $100,000 so brought into active circulation, is just so much added to the capital of the nation; for money hoarded is dead, and, for all useful purposes, the same as if it did not exist.

4. A bank saves a vast deal of time, trouble and expense to its customers; to a merchant who has to pay $10,000, there is a wide difference between drawing a *cheque* for the amount, and counting down the cash, and so also between receiving $10,000 in coin, and receiving it in a simple draft on the bank. Where a merchant keeps an account with a bank, he accepts all bills drawn upon him payable at the bank, which pays them, without advice, charges the amount to him, and returns them cancelled with his Passbook; and where the merchant has bills to collect, however numerous they may be, he pays them into the bank which takes care to present them when due, to collect their amounts and to credit them to him in account. If the bank receive any bad orc ounterfeit coins or notes, it, and not the merchant, bears the loss.

5. A bank benefits society by making advances to persons who want to borrow money, whereby persons engaged in trade and commerce are enabled to augment their capital, and consequently their wealth. Its advances are made, by discounting bills upon personal security, upon mortgage of real estate, upon policies of life insurance, and sometimes upon the joint security of the borrower and two or three of his friends. The diffusion of money thus supplied, stimulates production, and enriches the inhabitants of the locality. This principle is so well understood in Scotland, that it is recorded by the select committee of the House of Commons on banking, page 43 of their report, that it is not unusual for the Scotch banks to establish branches in poor districts with the view of enriching them, and of future profit, from that enrichment.

6. A bank benefits a nation, also by transmitting money, expeditiously, safely, and cheaply, from one part of the country to another. If we had a bank at Honolulu, with a branch on Hawaii, and others on Maui, Molokai and Kauai, it would seldom or ever be necessary either for individuals, or even for the government, to send the money from one island to another ; the proceeds of the sales of goods, of duties and taxes, and even the school funds might be paid in to such bank and its branches, and might be drawn for, in payment of local salaries, advances to planters, payment of produce, labor done on public works, &c. To any one wishing to travel over the Islands, it would be a small advantage for him to be able to pay in a given amount to the bank in Honolulu, and take a letter of credit with him to receive it, at the branches, as he might have occasion to spend it.

7. A bank affords to all respectable customers a continual reference as to their respectability. Bankers usually, for their common safety, communicate confidentially with each other, and they possess means of ascertaining character, without resorting to invidious enquiries. The man of honest industry, who is punctual to his engagements, is sure to meet his reward, in the increased facilities which bankers afford him, while the credit of the profligate, the spendthrift, the cheat and the gambler is limited to the amount of his available cash or securities that may be in hand. It was one of the many wise sayings of Franklin, that *credit is money*. No man engaged in business ought ever to forget that maxim, nor this other, *better throw away a pound of gold than an ounce of credit, at any time or under any circumstances.*

8. A Bank is of great advantage to all who either from incapacity, carelessness, or want of time, do not keep their accounts regularly. With all such if they pay in all their yearly income to their banker, and draw on him for all the payments they make, they will find their accounts accurately kept in his Pass-book, which they can call for, at any time. They can thus know both what they have spent during the year, and at any time during its course, so as to avoid the evil of spending more than their income. Besides by paying every account by cheque, that in itself is proof of payment of the account for which it was given, if the same bill should be presented twice for payment.

9. Not the least advantages of a Bank, are the habits of frugality and saving which such an institution tends to create. These, as yet, hardly exist among the Hawaiian people ; they are improvident and wasteful, like all other people in a state of incipient civilization ; they require to be taught to look beyond the moment of present enjoyment to that of future comfort ; and nothing will do this, so effectually, as a Bank, where they can deposit their money safely, and receive for its use some interest.

But to accomplish all these and other benefits which might be mentioned, a Bank must have its sources of profit to itself. Such an institution cannot be conducted without great expense in the form of rent, taxes, repairs of the house in which the business is carried on, salaries of the officers, stationer's bill for books, paper notes, stamps, postages, &c. Its profits are its discounts, interest charged for money advanced, dividends on stocks held, and commission on business transacted.

To realize these profits a Bank must possess ample means which consist of :—

First, The capital paid down by the partners or share-holders.

Secondly, The amount of money lodged by their customers.

Thirdly, The amount of notes they are able to keep out in circulation.

Fourthly, The amount of money deposited to be repaid, in some distant place, at a future day.

These disposable means are employed :—First, in discounting bills. Secondly, in advance of money in the shape of cash credits or overdrawn accounts. Thirdly, in the purchase of government or other

securities. Fourthly, a part is kept in the Banker's *till*, to meet his current demands. Of these four ways of employing the capital of a Bank, three are productive, and one is unproductive. The discounting of bills yields interest; the overdrawn accounts yield interest; the Government securities yield interest; but the money in the till yields no interest.

An important question naturally arises:—Is there scope for a Bank on these islands? By the returns of the late, and of the present Collector General of Customs, it is shown that the consumption of commodities for the last five years was as follows:—

1847	$653,930
1848	572,067
1849	622,637
1850	1,066,528
1851	1,442,419

in all $4,357,581, leaving an average of $871,516 yearly for the five years. It is not *unreasonable* to presume that our future consumption will not be less than the average of the three last years, which was $1,010,528; but for the greater precaution, I shall take the average of five years, namely, $871,516. Allowing one fourth or $217,879 to be paid in cash, and three fourths, or $653,637, to be paid in notes at 4 months; these notes at the legal rate of interest of 12 per cent per annum, would afford discounts to the amount of $78,436. It would be a great advantage to commission merchants to be able to discount their sales and remit promptly to their constituents, so as to place the latter in a position to renew their consignments; and to the merchant who does business, on his own account, it would be quite as great a convenience, to be able to obtain the means of repeating his speculations, in place of waiting four months. Nevertheless, it is not to be expected that all mercantile notes would be offered for discount; I shall therefore take only one half, say $326,818, producing discounts to the amount of $39,218.

I do not think that it can be beyond the mark to assume that $20,000 a year might be employed in discounting notes to tradesmen and mechanics at 12 per cent, producing $2,400. Neither does it appear to me extravagant to suppose that $50,000 might be advanced to planters in the discount of bills secured by good mortgages, producing at the

same rate of interest $6000 * In Bank commissions the Bank might annually gain $1000 and it would certainly be worth the while of the Government to pay the Bank $3000 (if found to be absolutely secure and well managed) for receiving and disbursing the public monies.

Under these suppositions, the Bank might have a yearly revenue of $54,618, which at 20 per cent interest would represent a capital of $273,090 without allowing any thing for expenses or bad debts. Although these calculations are necessarily vague, I think no one can doubt that a Banking capital of say $200,000 might, at present, be advantageously and profitably employed on these islands.

As the rate of interest for money has ranged for the last twelve months, I might have assumed a much higher basis on which to calculate the profits of a Bank ; but is my belief that any rate higher than 12 per cent per annum, while it might benefit the few capitalists among us, would ruin our agricultural and commercial interests, on which, and *not* on the usurious gains of a few monied men depends the prosperity of the nation.

In the foregoing remarks I have confined myself chiefly to a Bank of deposit, loan, and discount, as by far the safest with which to commence banking in this young Kingdom. In the Prospectus of the London and Dublin Joint Stock Bank with a capital of £1,000,000 sterling, brought out, in 1841, under the auspices of the Most Noble the Marquis of Ormonde, the Right Honorable the Earl of Mountcashel, the Right Honorable the Earl of Kingston, the Right Honorable the Viscount Lorton, the Right Honorable the Lord Carbery, the Right Honorable the Lord Dunally, Sir Charles Henry Coote, Bart., M. P., and Lesley Alexander, Esq., and of which I had the honor to be one of the nine directors, one of the chief securities held out to the public was *its not being a bank of issue, and consequently not so exposed to runs and panics, nor obliged to keep so large a stock of gold at the branches, or to invest large sums at a low rate of interest in government securities.* This feature was suggested by one of the Directors, William Medley, Esquire, who had grown old as a Banker

* Permanent loans are contrary to the principles of sound banking; but it is believed that such might be made through the agency of the bank, on account of small capitalists living on the interest of their money, to a much larger amount than $50,000.

at Uxbridge, and as a bill-discounter in London. Another feature of security in the Bank referred to was the following :—

The Bank will be established under a deed of settlement with a power of suing and being sued, in the name of one of its officers, and with effectual provisions for limiting the liabilities of shareholders, by rendering it imperative on the part of the Directors or Auditors, or a majority in value of the Proprietors present at any meeting convened for the purpose by public advertisment, to dissolve the bank, in the event of one third of the subscribed capital being lost." Both these features I would recommend in any Bank that may be estabished in Honolulu.

No doubt one great source of profit to banks is in their issue ; and an issue of paper to the extent of one fourth of the paid up capital would be a very safe one in other countries ; but here, where the natives are so suspicious about what coins they take, that fourth part of notes would be returned so rapidly for gold or silver, that the Bank would have to keep constantly in its vaults an equal value in metallic currency to redeem its paper circulation, and thus the latter would leave no profit whatever. To intoduce a paper circulation into these islands, always convertible into gold or silver on demand, would require much time and careful management. An experiment might perhaps be made with an issue of notes to the amount of say 5 per cent on the paid up capital, and if that succeeded it might be followed up by an equal issue every year, till the whole issue amounted to 25 per cent upon the whole paid up capital. But for Honolulu, as I have before said, I would prefer, for safety, a Bank purely of Deposit, Loan and Discount.

There are two kinds of Banks, viz : private and public. A private Bank consists of but few partners, who supply the whole capital from their own resources. It is the cheapest, because the partner's attend to its mangement, without any salary. A public Bank is one where the capital is divided into shares and raised by subscription. The shareholders, for its management, elect a certain number from among themselves, as Directors, who are paid for their services. Such a Bank is called a *Joint Stock Bank.* A Bank of the latter description although more costly, would, I think, be most acceptable in this community, as it would give to all, natives and foreigners, an equal opportunity of participating in its profits.

The next important question is:—Could an adequate capital be raised in this community, and in what manner? I think it could, and in some such manner as that shown in the following supposed PROSPECTUS:

HAWAIIAN BANK

OF DEPOSIT, LOAN, AND DISCOUNT.

CAPITAL $500,000!!!

In 5000 shares of $100 each. Deposit $10 per share, and afterwards not more than $40 per share, will be called for in the first two years, payable by Instalments of $10, at intervals of not less than three months.

————————, President.

Six Ordinary Directors. To serve gratis for the first year and thereafter to be paid moderately for their daily attendances.

One Managing Director of Banking experience, to be always on the spot and well paid.

Three Auditors.

One Solicitor or Attorney.

San Francisco	Agents,	————————
Hong Kong	do.	————————
New York	do.	————————
London	do.	————————

1. The shares of the Company will be issued in two series of 2500 each. The second series shall not be appropriated until the business of the Bank require their allotment. The holders of the first series, will have a preference, pro rata, in their distribution.

2. No one shall be eligible to the office of President or Ordinary Director who shall hold less than 100 shares, nor for that of Auditor or Solicitor who shall hold less than 30 shares; nor for Managing Director who shall hold less than 50 shares; any of said officers in default for non-payment of any call, for more than three months after it is due, shall forfeit his office; and all calls must be paid in hard coin.

3. Each series of shares shall have a portion reserved for distribution abroad, where the calls can be paid to the agents of the Bank,

and where the dividends may be received at the option of the shareholders.

4. The provisional directors shall hold office only till the first general meeting, but then, and afterwards, they, and all other officers of the Bank, shall be elected by the shareholders, by ballot. Directors and other officers shall be indefinitely re-eligible ; and absent or foreign shareholders may vote at all general meetings, by proxy.

5. A general meeting of the shareholders will be held annually, at which a full report of the affairs of the Company and a balance sheet will be submitted to the shareholders, thereafter printed, and a copy sent to every shareholder.

6. The qualifications for voting at the yearly meetings for the election of officers, shall be 5 shares one vote ; 15 shares two votes ; 25 shares 3 votes ; 40 shares 4 votes ; 60 shares 5 votes ; 80 shares 6 votes ; and 100 shares 7 votes, and in the same proportion for any additional number of shares.

7. The shares shall be transferable without endorsement, but the dividends shall only be paid to the parties in whose names the shares may be registered, at the time when the dividend is due.

8. In the absence of a charter limiting responsibility, the Bank will be established under a deed of settlement, which shall contain the most effectual provisions for the discharge of all its debts, and yet protect the shareholders, by rendering imperative the dissolution of the institution, in the event of one third of the subscribed capital being lost.

9. The operations of the Bank will be confined, to those of Deposit, Loan, and Discount, dealings in Exchange, Bullion and Coins.

10. The general management of the Bank will be vested in the Managing Director, and the ordinary Directors, under the supervision of the President, all of whom shall be accountable to the shareholders in their general meetings.

You are requested to bear in mind that the foregoing is a mere imaginary PROSPECTUS, open to improvement, by those who might take part in the undertaking. But I may add that with such a PROSPECTUS, or an improved one on similar principles, as might be agreed upon, under a better security for the preservation of the public peace, I should be willing for myself to take 100 shares, which would be an

interest of say ten thousand dollars, and to pledge my best exertions to dispose of another hundred among my personal friends abroad.

As the money market now is in the United States and Europe, and as it is likely long to be, if peace be preserved, from the great influx of gold from California and Australia, there would be no difficulty in obtaining a large subscription by foreign capitalists, if we could only convince them that the Banking House would be *safe*, that their capital would be *safe*, and that it would yield a dividend twice or three times the interest that they could make at home. Capitalists are essentially the friends of order ; nothing would tempt them to risk their money here, if they thought the Government had not a sufficient force to protect the Bank from being plundered.' For this purpose a small, well-organised force would be sufficient in such a place as Honolulu.

There is no country in the world where Banks have done so much good, and been so well managed as in my native country, Scotland. The Bank of Scotland, chartered in 1695, is still in prosperous existence, and its shares of £100 are worth £183. The Royal Bank of Scotland, chartered in 1727, is in the same condition, and its shares of £100 are worth £135. The Bank known under the name of the British Linen Company, chartered in 1746, is also flourishing to this day, and its shares of £100 are worth £199 10s. Besides these which are the most ancient Banks in Scotland, there are numerous others, such as the Aberdeen Banking Company, the Aberdeen town and county Bank, the Arbroath Banking Company, the Bank of Ayr, Carrick and Company's Bank of Glasgow, the Commercial Banking Company of Scotland, the Commercial Banking Company, the Dundee Banking Company, the Dundee Bank, the Dundee Commercial Bank, the Dundee Union Bank, the Exchange and Deposit Bank, the Falkirk Banking Company, the Fife Banking Company, the Greenock Banking Company, the Glasgow Banking Company, the Leith Banking Company, the National Bank of Scotland, the Montrose Bank, the Paisley Union Bank, the Perth Banking Company, the Perth Union Bank, Ramsay Bonar & Co's Bank, Edinburgh, the Renfrewshire Banking Company, the Shetland Bank, Sir William Forbes & Co's Bank, Edinburgh, the Stirling Banking Company, the Thistle Bank, the Ayrshire Banking Company, the Glasgow Union Banking Company, the Western Bank of Scotland, and the Central Bank of Scotland, all of which pay large dividends ; and their shares sell at a premium.

All these Banks, so far as I know, issue their own notes as low as 20 shillings, and act liberally upon the plan of granting credits, on cash accounts, which was introduced by the Bank of Scotland in 1729. The nature of these cash accounts consists in a credit, given by the Banks, on loan, to the extent of any given sum, to any one that can produce two or more persons of undoubted credit and property to become sureties for the repayment on demand of the sum credited, with interest. Any person having obtained this credit, may employ the amount in his business, paying interest not on the whole amount, but upon the sums which he actually draws for; and obtaining interest on the smallest amount he may pay *in*, in satisfaction of that credit. These loans are advanced in the notes of the Bank which are equal to gold, which is the chief advantage of the Bank in giving such credits. These cash accounts have greatly advanced the prosperity of Scotland since the system was commenced. They enable any young man of good character, who enjoys the confidence of his own friends, to commence business, without any Capital of his own, and often to rise to a condition of great opulence.

In 1793 and 1825, when so many bankruptcies took place among country bankers in England, not one Scotch bank failed to make good its engagements. The committee of the House of Lords, which sat in 1826, reported that the banks of Scotland, whether chartered or joint stock companies, or private establishments, had for more than a century exhibited a stability which they believed to be unexampled in the history of Banking; that they supported themselves from 1797 to 1812 without any protection from the restrictions by which the Bank of England and that of Ireland were relieved from cash payments, and that there was little demand for gold in Scotland during the great embarrassments in the circulation which prevailed in England, previous to 1826. The same committee further reported that as, during the whole of that period, a large portion of their issues consisted almost entirely of notes not exceeding £1 or £1 1s, there was the strongest reason for concluding that as far as respected the Banks of Scotland, the issue of paper of that description had been found compatible with the highest degree of solidity. The Act of 1826 which put an end to the circulation of notes under the value of £5 in England, did not extend to Scotland, where, to this day, a large portion of the circulation of the country, always at par with gold, is of £1 notes.

All of the Scotch Banks take deposits and allow interest upon very small sums lodged with them. Gilbart in his "History of principles of Banking" states "*The Deposit system of Banking is universally considered to be one cause of the prudence and frugality by which the lower classes of the people of Scotland are distinguished.*"

I see no reason why a Bank in Honolulu, adopting a similar deposit system should not produce the same moral results; nor is there any good cause, beyond the suspicion and distrust which characterise the natives, as I have already mentioned, why a well-regulated issue of £5 notes, should prove less safe here, than £1 notes have done in Scotland for more than a century. Of course, in so saying, I suppose an equally correct and discreet management. But, for the reasons which I have before stated, I consider that a Bank of Deposit, Loan, and Discount, and not of *Issue*, would be the *safest* in these Islands.

R. C. WYLLIE.

REPORT OF THE CHAIRMAN OF THE COMMITTEE ON POULTRY.

To the President and Members of the R. H. A. Society.

GENTLEMEN:—So much valuable information has been published on the subject of "The Rearing and Management of Fowls, and other Description of Poultry," by persons in every respect better qualified than I feel myself to be, that I fear in bringing it again before the notice of this Society, I shall be but trespassing upon its valuable time, and were it not that the climate of these Islands differs so very materially from those where this subject has been so much discussed, I should refer the members of the R. H. A. Society to the very interesting work, now in the hands of the librarian, entitled:—"Dixon & Kerr's Ornamental and Domestic Poultry," which, containing, as it undoubtedly does, the experience of many well-known Poultry Breeders, both in England and the United States, would, but for the difference of climate, seem to make quite superfluous any thing further that could be written on this topic.

In order, more clearly, to make myself understood, I will call the attention of those about to engage in breeding Fowls, to the necessity of first providing a suitable house for them, which should be on quite a different principle to those constructed in colder climates; here we have warmth, consequently with a tight roof so as to ensure dryness, we have, by building the sides of laths, so as to admit air, a cheap and suitable Fowl House. I would recommend its being divided into four partitions, say, half for roosting, the other half into three parts, one for laying, which should be provided with boxes, chalk nest eggs, and darkened, another for setting and the third for the hens and chicks to gain strength prior to being turned out into the Fowl yard.

There ought not to be any communication for laying or other fowls into the setting house, and the entrance into the laying house might either be from the roosting department, or by sliding doors from outside. The entire floor should be tiled, so that by raising the setting and laying boxes a few inches from the ground, the whole house might be washed daily, a plan which would effectually banish lice, at present the great plague of our Fowl Houses. Where this cannot conveniently be done it would be very desirable to water the entire fowl house after it has been carefully swept out, at least once a day with lime-water.

The next important consideration after having built the house, appears to me to be that of stocking it with useful birds, and this has not hitherto been found a very easy matter, at all events many with whom I have conversed seem to have had but partial success and others have been quite unsuccessful. I should infer, however, that the principal difficulty has arisen from the attempt having been made to obtain cheap stocks by sending to Kauai, or Hawaii, which on arrival here, half dead from exposure, and sea sickness, have been turned into the fowl yard, most likely into quite a different climate, the result of which has been, that in the course of a month out of one hundred head, not twenty-five have remained alive. I have found by experience that it is quite far enough to remove young birds even from Honolulu to Nuuanu Valley, and I would suggest that the house be stocked if possible from its immediate neighborhood, even if a commencement should have to be made with the common native hen, which for laying, setting and bringing up her brood is superior to any ever yet imported, although she is small and lays small eggs of an inferior flavor.

There can be no doubt but she is a native of these Islands, since Captain Cook was supplied with fowls at Waimea on Kauai, when he first discovered that Island on the 19th of January 1778.

In order to increase the size of the fowl and the flavor of the eggs, Shanghae, Cochin China, and Spanish fowls might be introduced, as well as Dorkings from England ; a few Polish hens would likewise be very desirable additions, owing to their great prolificness.

It would not perhaps be judicious to have more than three coops, as it frequently happens that too great a mixture increases the weight to the prejudice of the incubating qualities, and care should be taken always to set the largest eggs ; by this means the stock in the second year, would be an excellent well acclimated mixed breed, useful for all domestic purposes. It would be well to avoid setting the large Shanghae hens (excepting those of the pure white breed,) as I have invariably found them restless and disposed to leave their nests after the 14th day, whilst on the other hand, hens crossed between Spanish and Native, or Shanghae and Native, have proved excellent incubators; none can however in this respect, excel the pure Native hen.

Great care should be taken to keep the setting hens free from lice, this important object so desirable both for the comfort of the old hen, her young brood, and the man in charge of the stock, will be partially if not entirely gained, by tiling and washing the house with lime water: in addition to these precautions, I would recommend that fine lime be mixed with the straw in the box before setting the hen, and should lice appear a few days prior to her hatching the eggs, she ought to be removed with her eggs into a clean box similarly prepared, carefully rubbing her head and neck with a little whale oil, which will effectually prevent any lice she may have upon her, from annoying her head and neck, and will most probably drive them away altogether.

If however oil be used too freely it will most likely find its way down to the eggs and hermetically seal them, I have lost whole broods by using oil incautiously, but have had the satisfaction of saving the hens. Many persons adopt the plan of having rows of boxes. It may answer very well in cold climates, but here where the heat stimulates the breeding of lice to an enormous extent, it would seem desirable to have separate boxes well whitewashed, in order that when a hen has hatched her brood, the box may be removed and washed.

It will hardly be necessary for me to remind those who have paid any attention to the rearing of fowls, that the best time to raise stock is early in Spring, when the hens begin to lay. Sometimes they commence in January and continue to lay freely until the end of April, when in a great measure they cease ; during these months a large quantity may be reared, and I think it will be found that chicks hatched in these months are less liable to disease, and prove finer and stronger birds, than those hatched afterwards and will be ready for the table in September, whereas those hatched during the hot months of June, July and August, frequently become sickly, and are carried off by an eye disease which those having had the advantage of the spring months generally recover from.

A great many experiments have been tried to cure this disease, without any apparent success. On examining the cancer I have observed it to contain small worms, and have frequently watched the natives wash the chick's eyes, after squeezing the worms out, but perhaps the best remedy would be to separate the sick chicks from the sound, carefully wash the cancers once a day, with any common eye-wash, as sulphate of zinc, or nitrate of silver, very weak, and give them small doses of Jalap, say 6 grains each, once a day. Prevention however is better than cure, and it is the opinion of many, that a clean house, wholesome food, and cool water, with a large range having plenty of shade and grass, will in a measure prevent sickness.

Regarding the best descriptions of food for poultry, and particularly for fowls, all concur in recommending grain of some kind, and whether it be Indian Corn, Barley, Oats, Paddy or Millet, matters little, so long as any one of these can be procured at a moderate price. Any of these productions could be raised here to an extent far exceeding our necessities, but the want of energy on the part of the great landed proprietors, few of whom, it seems, are willing to rent their tracts, or cultivate them themselves, and the high price of native labor, which, besides, cannot be depended upon, compels us to look abroad for supplies which are always dear, and uncertain. Millet or brown corn grows here in great perfection, and to those who have land I would strongly recommend the planting of this grain, as I know of no grain which contains so much nutriment, and its long stalks make both excellent fodder and food for horses or oxen.

Indian Corn never having been lower at this port than $5 per barrel, which is far too high for feeding fowls, many have looked to China in the hopes of procuring Paddy, and in the absence of Millet, it is probably the best thing that can be given to fowls, inasmuch as it being a smaller grain than Indian corn, the same weight will he more fairly divided amongst the stock.

As to quantity much will depend upon the extent of range allowed the fowls, as well as what vegetable matter they can pick. I have been in the habit of giving my stock consisting of about 70 laying hens and some 150 chickens, from 10 to 15 pounds of Paddy per day, besides lettuces, cabbages, and the melon and other pealings from the kitchen, and as they are in excellent condition I infer I give them enough. Paddy has generally cost from 2 to 3 cents per lb.

Cool water is an essential requisite for fowls; water heated by the rays of the sun is apt to occasion disease. I would therefore suggest a self supplying machine placed under cover, where there is no stream running through the yard, which may be made at a very small cost by inverting a demijohn filled with water on a stand with the neck touching the receiver which can be made of a few tin plates, by this means the supply will be constant, the water cool and clean, and labor saved.

Gravel, lime, sand, and ashes are essential requisites in a fowl-yard, and where a garden is cultivated, the manure bed should be there also, particularly if composed of stable dung.

I would here remark that sea sand has an immediate and very destructive effect upon fowls, and must therefore be avoided.

A few geese might be allowed to run in the fowl yard, but I would most certainly exclude turkeys and ducks, the former are constantly picking the young chicks, and the latter cannot defend their ducklings from the attacks of the hens and turkeys. Ducks besides are very voracious, and prevent chickens from getting a fair share of their daily allowance of food.

From seventy laying-hens, not more than an average of 30 eggs daily can be expected, and this quantity decreases gradually as summer advances, it must be remembered that some will be setting and others not allowed to sit, will not commence again for several days, it is probable that the receipts during the few summer months will be very small, but they will increase in the fall of the year.

The principal stocks on these Island are composed of crosses between the native hen, Shanghaes, Malays and Spanish fowls, and it will be seen from comparing the following weights of fowls taken indiscriminately from my stock, with the stocks of the best breeders in the U. S. as extracted from Dixon and Kerr's volume already alluded to, that our stocks are quite equal, if not superior to theirs.

I will commence with my own—

Cock,	¾ Shanghae, ¼ Native, weighed alive,	3 years old	8 lbs.
"	Native, Spanish, and Shanghae,	18 mos. "	6¾ "
"	Pure Shanghae, imported,	16 mos. "	6¾ "
"	do. do. do.	16 mos. "	6 "
Hen,	Pure do. do.	full-grown	5 "
"	do. do. do.	do.	5 "
"	Malay, imported, full-grown, with a brood,		5¼ "
"	Sydney, do. do.		6 "
"	Shanghae ¾, Native ¼,		5¼ "
"	do. do.		5¼ "
"	Frizzled, imported from Valparaiso, full-grown,		4 "
"	Pure Game, do. do. do. do.		3 "
"	Native Hen, full-grown,		4 "
"	Spanish, pure, and Shanghae, the progeny of 14 mos.		4 "
Chick from mixed breeds, 3 mos.,			2 "

I will now quote from Messrs. Dixon and Kerr's volume, pages 153, 154, and 155, the following—

"The reader will be better able to judge what weights fowls may be reasonably supposed to attain after the inspection of the following lists of live weights of various poultry with which we have been obligingly favored. But as the birds were generally out of condition in consequence of their being mostly at that time on the moult, and also from the previous wet season, the weights are less than they would be under more favorable circumstances. One list gives

	lbs.	oz.		lbs.	oz.
Black Polish Cock, 3 years old,	5	3	Black nondescript Hen,	4	10
Do. do. Hen, do. do.,	3	4	Globe-crested Polish Hen,	3	9
Do. do. Pullet,	2	6	Silver Polish Hen,	3	4
Golden Polish Cock,	5	0	Game Cock,	4	10
Do. do. Hen,	3	8	Do. Hen,	3	0
Another Hen,	3	10	Young blue dom. Cock,	3	6
Golden Polish Pullet,	2	8	Do. do. Hen,	3	0
Malay Hen,	3	12	Large dom. bybred Hen,	3	8
Creole (silver Hamburg) Hen,	3	1			

Among these the Malay hen was moulting, and not up to her usual weight by nearly a pound."

It will be observed there is a great relative difference between the Pullets and the grown hens of the Polish breed. All the Polish increase much in size and beauty the second month.

"Another list readily furnished by Mr. Alfred Whitaker gives

	lbs.	oz.
Pheasant Malay Cock, 2 years old, average each	7	0
Do. Do. Cockerel, 5 mos old,	7	0
Do. Do. Hen,	5	0
Do. Do. Pullet, 17 mos. old,	5	3
Do. crossed with Dorking Hen, 4 years old,	5	8
Speckled Surrey Hen, 2 yrs old,	5	12
Spanish Hen,	5	0
Two Dorking Cocks, each	7	0
Do. do. Hens,	6	8
Do. do. do.,	6	12
Cock Turkey, 2½ years old,	17	12
Hen do., 1½ do.,	10	0
Do. do., do., do.,	9	9
Musk Drake, moulting,	9	12

"The Dorking hens belong to a neighbor and are very fine ones. The hens it will be seen, approach nearer to the weight of the cocks than is the case with the Pheasant Malays. The Spanish hen is about to moult, and is rather under weight."

"Our own poultry yard furnishes these—

	lbs.	oz.
Turkey-Cock, 16 mos. old,	16	0
Do. Hen, 3 or 4 years old,	8	0
White China Gander, 6 yrs. old,	12	13
Do. Do. Goose,	11	13
Common " do., 6 yrs. old,	10	11
Cochin China Cock about 16 mos. old moulting,	6	5
Do. do. Hen, do. do.	4	6
Malay Cock, do. do.	6	14
Do. Hen, do. do.	4	8
Pheasant Malay Cock,	5	7
Do. do. Hen, moulting,	3	8
Game Cockerel, abt. 5 mos. old,	4	2
Golden Hambg. Cockerel, after a voyage, 5 mos. old,	3	8
Do. do. Pullet, do. do.,	2	4
Cochin China Cockerel, 6 mos.	4	14
Another, do.	4	13½
Silver Hamburg Cockerel, after traveling, about 5 mos. old,	3	1
Do. Pullet, do. do. do.,	2	8
Black Polish Hen, moulting,	3	0
Golden Hamburg, do.,	2	3
Andalusian Cockerel, 4 mos.,	3	8
Do. Pullet, do.,	2	6½
Black Spanish Cockerel, do.,	2	11
Do. Do. Pullet, do.,	2	11
Silver Polish Cockerel, 4½ mos.,	2	14½
Golden Poland Pullet, 5 mos.,	2	8
White Crested Golden Poland Pullet, do.,	2	3

I will make another extract from this interesting works which will prove of use to those about to commence keeping poultry; respecting the number of days requested for different descriptions of poultry to bring out their broods, the author says:

"Great mistakes are sometimes committed bywriters on poultry, in regard to the various periods of incubation of Hens, Ducks, Turkeys, &c. I have taken some pains to ascertain the time of each, and I will give you the result:—

A Hen, under ordinary circumstances, sits	20 days.
A Guinea Fowl, ...	25½ do.
A Duck, ...	26 do.
A Turkey.	27 do.
A Goose, ...	29 do.
A Musk Duck, . . .	32 or 33 do.

In this report I have taken little notice of Turkeys, Geese, Ducks, or Guinea Fowls, as I possess too little information regarding their habits and domestic qualities, with reference to profit on these islands to venture upon any remarks worthy of record, but from the trifling experience I have had I should say that Turkeys were the most unprofitable, and that the breeding of Ducks and Geese, would on the contrary, with due care and attention to their habits, be more profitable than the rearing of any other descriptions of Poultry.

Turkeys attain a very respectable weight here ; a few weeks ago I weighed a Cock bird, of my own rearing, ready for the spit, and to my surprise he weighed 17 lbs ; he might have been 2 years old, and had not been put up to fatten.

The following are the weights of English Ganders, Geese, and Goslings running in my Fowl yard :—

Gander, 14 months old	. . . . .	9 lbs.
Gander, do. do.	. . . . .	8½ "
Goose, do. do.	. . . . .	8½ "
Goose, do. do.	. . . . .	8 "
Gosling, 3 months old,	. . . . .	6½ "
do. do. do.	. . . . .	7 "
do. do. do.	. . . . .	7 "

It must be borne in mind that this report more particularly applies to the "Rearing and Management of Poultry," where the vicinity to a town requires the erection of Fowl houses, and the enclosing of Fowl yards, and does not apply to those extensive farms on these Islands where fowls are allowed to roost out, and forage for their own food, being merely called together once a day to satisfy the proprietor that the whole have not been stolen, or that they have not become the prey of wild dogs, hawks, owls, or rats of two or more legs. But whilst it may answer the purpose of the Cattle or Sheep Farmer, the Sugar or Coffee Planter, to allow his Fowls to increase or decrease

so long as he finds a constant supply for his table, such a system cannot answer the purpose of the Fowl Breeder, and he may rest assured that without cheap food, cheap labor and constant attention, he cannot make it a profitable business, whilst on the contrary, with these requisites, and a ready market, he may make a very profitable business from it.

It is a matter of doubt however, in my mind, whether these Islands, at present, can furnish a market for the disposal of large quantities of Poultry and Eggs, and whether they are not quite abundantly supplied at present, by the Poe fed Poultry of the Natives. It is true California will most likely require supplies from Foreign countries of Domestic Poultry for a few years to come, but it would not be wise for a Poultry Breeder to look to Foreign markets for the sale of his stock; and so long therefore as trade languishes here, and vessels do not enter our ports in greater numbers, for supplies, than they do at present, the result of this branch of business must be doubtful. With regard to the necessary labor required to carry on a large establishment of this description I imagine one Chinese Coolie is all that would be required, and I have no doubt, whatever, but that he could be made just as valuable a domestic in a Fowl Yard, as he has proved himself to be on a sugar or coffee plantation, where he has been strictly though kindly and humanely treated.

REPORT OF THE COMMITTEE ON HORTICULTURE.

BY A. B. BATES, ESQ.

To the Members of the R. H. A. Society.

Why your humble servant should be charged with the duty of furnishing a Report as chairman of the committee on Horticulture, I am at a loss to understand, unless upon the assumption that my continued neglect of the application of the principles of the science, is regarded as an evidence they are so familiar to me, as to render their use a drudgery. But be that as it may, having as yet since my resi-

dence upon these islands, neither supplied my table with ordinary culinary vegetables, or any of my friends with a boquet of annual or perennial flowers from my own garden, my experience, whatever may be my taste or skill, must necessarily be very limited and not enable me to profit you by any practical remarks upon the subject of gardening.

Ornamental and useful Horticulture are themes of wide range, which merit a description from an abler pen than mine, to present to you the various reasons that should commmend them to your favorable regard. But, as a duty is to be performed, I shall discharge it as I have ability, asking in advance, your kind consideration of my inexperience and limited knowledge.

"Home, Sweet Home," are familiar words, but have they ever been uttered without causing a pleasurable emotion and exciting agreeable recollections of the scenes of our childhood ?

Our fathers and our mothers, our brothers and our sisters, (have we ever sustained these relations,) are called to mind by those oft-repeated words, but they alone do not occupy entirely our memories when the scene of home is presented to us. How often have we all thought of the rose bush growing by our mother's bed-room window, from which we have plucked a boquet for those we have loved in our youth ; of the crotched apple tree in the orchard from which we have gathered a sweeting or a pippin to gratify our uncorrupted tastes when a boy ; of the melon-patch back of the barn from which we have tasted the nutmeg and cantelope with a relish not familiar to us now ; and are not these recollections of the limited horticulture of our parents essential elements in the pleasurable emotions called into action by the recollections of our homes ? If so, is it not among our first duties to our children that they shall not lack the pleasures we enjoy, when in after years they listen to the ever endearing words "Home, Sweet Home."

When the work of Creation was completed, "And the LORD GOD formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul. The LORD GOD planted a garden eastward of Eden, and therein he put the man he had formed."

Perchance, then, that all of us cannot realize that additional pleas-

ures have been secured to us, by our immediate ancestors in the cultivation of fruit-bearing trees and vines, and flower-bearing shrubs and bushes. We all are participators in the kindly feelings produced by the reflection that the ancient homestead of our common ancestor was a garden, and that "Out of the ground made the LORD GOD to grow every tree that is pleasant to the sight, and good for food," and who among us would forego the delight produced by the recollection that the original homestead of our race was the garden of Eden?

It would seem therefore that it was the design of our Creator that a taste for Horticulture should originate with the creation of our being and that it should accompany the development of man down to the present period. Let us, therefore, encourage and foster it as an art sanctioned by Holy Writ, in that, "The LORD GOD planted a garden eastward of Eden," before general agriculture was known.

But aside from the example of our Creator, who to imitate, it is always our duty, whether we can appreciate the motives of his acts, or they are hidden from our limited understandings, it seems to me there are many reasons that may be apparent to us all, why a garden should have our first attention. As an utilitarian as well as a lover of pleasure, I hesitate not to declare, that upon these islands horticulture should command the first consideration of all who desire their agricultural prosperity.

It is known that the soil of this kingdom, by the generous liberality of our Sovereign and the Chiefs has been apportioned between them and the people, and that much the largest proportion of our population are now the owners of only small tracts, without the pecuniary ability to increase their possessions. And it has also been assumed by those more familiar than myself with the cultivation of the present staples of the country, (with how much truth is yet to be proved,) that large estates can alone be made profitable to the farmer. Conceding this assumption to be true, much the largest class of our agriculturists are necessarily compelled to become Horticulturists, or labor without gain.

Besides, large estates, without the necessary capital to improve them, in whatever hands they may be, must remain waste land. It will be conceded that there are but few foreigners among us who have the pecuniary ability to make sugar or coffee plantations, and that the

natives are without the capital or credit to erect sugar-mills, or wait the return of their labor if bestowed upon growing coffee. Planters, therefore, they cannot become, and the only field open to them is the garden. They can only be interested in the horticultural products of our soil, and constituting a majority of the community in which we live, their interests should receive the prominent attention of this society.

But there are yet other considerations commending Horticulture to our especial consideration.

All political economists, and especially those of the free trade school, recommend the fostering care of a people to be bestowed upon such articles as are seen to find a ready and continued market. The products of our planters are seen to come into competition with similar staples of other countries, not only in domestic consumption but when they seek a foreign market. Sugar and Coffee are safely transported abroad, and Manila, China and Central America are all now competitors for the trade of the Pacific in those articles, and however great may be the consumption in districts where they cannot be produced, the supply is likely to be equal to the demand and furnished by cheaper labor and from countries where capital is more abundant than on these islands. A ready and continued market for the present staples of the islands is not, therefore, surely within the reach of our planters.

Now, how is it with regard to the Horticultural products of our soil? Are they as yet in abundance for home consumption, and are the markets in California, to which they can safely be transported, supplied?

Whoever has paid his "quarter" for less than a half-pound bunch of grapes, and a real for two small, sour oranges; and a like sum for a small and half ripe pine-apple in the Honolulu market, can answer as to the domestic supply; and the prices current of the same articles, from San Francisco, afford abundant proof that they are in demand in California.

I mention only these varieties of fruits that can and should be produced in our gardens, but there are many others, that could be cultivated at a profit that cannot be had at any price, here or in San Francisco, except in packages that have doubled Cape Horn or Cape of Good Hope. Almonds, Tamarinds, Prunes, Olives, Lemons, Pome-

granates, Dates, Figs, and many other nuts and fruits can be profitably cultivated in our tropical climate. And as yet California and our own people are dependent for the supply of most, if not all of them from ports beyond the Capes. Articles of like kinds, could they be had fresh plucked, or within forty days from their gathering, even at an advanced price over those that are brought from abroad, would command the market ; and were the utmost energy and consumate skill of our entire population, (were they proficients in the art of producing them,) to be entirely devoted to their production, the market here, and in California, is, and is likely to continue wide open for all the results of their labors. A successful competition is not to be anticipated from any quarter, and the demand is likely to increase beyond any possibility of supply from the limited area of arable land on these islands. Such being the fact, political economy would direct that the growing of fruits and nuts should receive the first considerations of this Society, if its object is to increase the agricultural wealth of the people at large.

Thus far I have endeavored to commend the subject of my report to the consideration of all, thinking myself without the ability to furnish any thing from experience or knowledge of the art of gardening of value to the Horticulturists, if any, of the Society.

Practical gardening is a science without its votaries among us. Beyond the cultivation of a few beans and tomatoes, and a few other common culinary vegetables, I know but few who have progressed in the application of the principles of the science, and those are gentlemen without the leisure to give personal attention to the subject, who have been dependent for their labor upon men entirely ignorant of the duties they were expected to perform. The necessary consequence has been, as yet, but little advance has been made in testing the capabilities of our soil to produce culinary vegetables and table fruits, and and at a cost within the reach of the community. Whenever a well directed and persevering effort has been made to produce any particular vegetable or fruit grown in tropical climates I believe it has been successful and I doubt not it always will prove to be.

If so, the only obstacle in the way of these Islands becoming, indeed, the garden of the Pacific, is the want of skillful gardeners ; and

how they are to be procured is worthy of the consideration of this Society.

The natives are now entirely ignorant, not only of the first principles of the art of making a garden, but of the use of the necessary implements of cultivation, and they must remain so without teachers. There may be a few foreigners among us capable of instructing them in the theory, but I have inquired in vain to find one who was willing to exhibit to them a practical illustration of his skill for hire.

Such being the fact, an effort to induce a few intelligent German gardeners to emigrate to our shores, (who would find immediate and profitable employment, I feel assured,) I would suggest, as a partial remedy for our present wants. They would enable those who have the taste and the pecuniary ability, without leisure to bestow personal attention upon a garden, to experiment with skillful labor, wisely directed, upon the capabilities of our soil, and their example, in preparing the earth, and planting seeds, and cultivating plants would be imitated by those who are ignorant.

There are few of the natives, even, who have not a natural taste for the cultivation of flowers and plants, as is manifested in the dwarfish specimens of geraniums and annuals that are seen near to and about their huts, and they are apt to imitate, as is apparent by their rapid conformity to the habits and tastes of a foreign race, and could they but see the results that would follow the skillful cultivation of a garden, I doubt not they would profit by it. Human nature is the same the world over, and remembering, as I do, the effect of the introduction, by myself, of several varieties of flowering shrubs and bushes into a district where they were not common, in inducing others to cultivate similar plants and improve their qualities and varieties, I cannot doubt the result would be the same here. Teachers who would instruct by example would soon furnish the islands with skillful Horticulturists.

Other committees of the Society, who are expected to report "on Analyses of Soils," "on Worms and other Injurious Vermin," "on Seasons," "on Trees and Grasses," "on Garden Seeds and Fruits," will probably enlarge upon the details of practical gardening, and I would not trespass on the ground assigned to them. The nature of our soil, its deficiencies and peculiarities; the kinds of noxious ver-

min that trespass on our plants and shrubs, of which we are all comparatively ignorant who have emigrated from northern climates; the seasons, which are as marked here as where the thermometer ranges down to zero; the trees and grapes, that can successfully be cultivated in this latitude and upon our soil; and the seeds and fruits that are indiginous and which can be successfully imported, all merit the careful investigation of the practical Horticulturist, and it is to be hoped that from year to year individuals will be found ready and willing to enlighten us upon those subjects. Without a knowledge of them all the practical gardener, however industrious and skillful in the use of tools, will labor without profit.

REPORT OF THE COMMITTEE ON COFFEE.

BY G. RHODES, Esq.

Mr. President,—I thought that in my essay on coffee read before the last meeting of this society, I had communicated the whole of my experience, and having been of late particularly engaged, I neglected to respond to your friendly call, a few weeks since, reminding me of the near approach of the meeting, and of my duties as chairman of the committee on coffee.

Within the last few days I have received a communication from my esteemed friend Mr. Pitman of Hilo, and as I consider that the subject is possessed of considerable interest, I shall endeavor to reply to it before this society. Mr. Pitman, says "There is one matter for "remark in connection with our coffee trees, and I should be much int- "erested in learning whether yours on Kauai are similarly affected. "What I allude to would take the shape of a blight, did I perceive "that it influenced the health of the plant, which I cannot say it appears "to do—this is a smut which crusts on the leaves, in appearance sim- "ilar to what may be observed on the leaves of trees in a manufactur- "ing district, where the appearance is easily accounted for. Al- "though this visitation may not injure the health of the plant, it is a

"decided eye-sore to me, as it detracts greatly from the beauty of "the tree, and I should feel thankful for any suggestion, which, in "application would tend to the removal of this blemish."

The smut alluded to by Mr. Pitman, is very common on Kauai, and I have observed that evergreens, whose leaves are generally very dark, are much more subject to it than plants whose foliage is of a bright or light green. I speak especially of trees of the citrus or orange tribe, bread-fruit, coffee, common hau, nereum splendens, or oleander, and other trees having very dark leaves. Whenever this smut appears to any extent, it must injure the tree, and shorten its life, by filling the pores of the leaves, and thereby preventing them from fulfilling their natural functions of procuring sustenance for the tree from the atmosphere.

It is a species of fungus, and I attribute its appearance in the first place to great moisture, and noxious vapors occasioned by excessive vegetation, and an imperfect circulation of air. When it has once attacked any plant of the darker-leaved tribes, it will, from it, extend to every other plant, of every description, in its vicinity ; all of which will droop and suffer, whilst the plant on which it originated remains among them ; but should it be removed, plants with light colored leaves, which do not appear to be predisposed to the disease will generally soon recover. This fungus will most frequently be found where the trees are very crowded, and in situations where this is the case, I should advise the sacrifice of a few of them by way of benefiting the rest.

If a thorough circulation of air can be preserved, the weeds buried at the roots of the trees by the frequent action of a small plough and the excessive moisture that accumulates from heavy rains, be carried off by drainage, I apprehend there would be little necessity for any unusual or particular treatment. A free circulation of pure air, I consider of the first importance in preserving the tree in a healthy condition, and if this be not provided, all other attention will be but labor lost.

I once tried to remove this fungus from a half grown orange tree, by watering the leaves with very weak brine, but to no effect, the leaves of the tree all fell, and those that succeeded them were in a very short time in as bad a condition as the old ones. In some wheat

growing countries I believe it is customary to steep the seed-wheat in a weak solution of lime and salt to prevent a disease in the wheat also called smut ; but not knowing whether there is any affinity between the two diseases, I cannot say that there would be any good effects derived from watering trees on which this fungus had made its appearance with a similar solution; even should such treatment be beneficial, it could not be practised on an extensive scale.

A prevention of the evil I consider much easier and better than a cure, and this I think will be effected by attending to the foregoing observations ; I will add that pruning will also act as a preventive of the disease, if it be practised at its proper season, especially in crowded situations ; all the dense and matted foliage, especially near the heart of the tree, and when the wood has done its work, should invariably be taken out ; by this means alone, I have no doubt, in many cases the blighting effects of the parasite may be stopped, and the health of the tree preserved.

REPORT OF THE COMMITTEE ON LABOR.
BY S. REYNOLDS, ESQ.

Labor has been a subject of much anxiety with planters on the different islands. The planters had long foreseen that laborers would have to be brought from foreign countries ; their anticipations are now matters of fact. Sugar plantations find it difficult to engage natives for any long term of time, a few only are willing to engage for more than three to six months. Importation is the only reliable source for permanent labor. Importation has commenced, and thus far promises to be satisfactory. Since our last meeting, the ship Thetis has arrived from Amoy, China, with about two hundred Coolies, which were distributed among the planters, as by contract entered into with the master, John Cass, before sailing from Honolulu.

They have proved, thus far, diligent, but not swift ; obedient, but require looking after. Planters have different views as to the relative

value, as laborers, between Coolies and Natives. Some think four Coolies equal to five Natives, in amount of labor ; others reverse the matter by placing three natives against four coolies. On the plantation of H. A. Pierce, & Co., there was some apparent jealousy by the natives when the coolies first arrived among them. At Koloa, some little skirmishing at first, but it soon subsided ; peace and harmony soon produced the kindest feelings. The coolies are far more nice in doing their labor, of which they feel a pride over the natives, calling them " Wahine ! Wahine !" (" Women ! Women".) On Doct. Wood's plantation coolies are considered far superior laborers to the natives, they perform more work, and do it better and handsomer.

The wages of the cooley is, by contract, three dollars a month, then the passage from Amoy, advance wages, and outfit, amount to nearly four dollars, which added to the wages make nearly seven dollars, this sum includes the board on the plantation. Natives have six dollars a month and find themselves.

On Mr. Charles Titcomb's coffee plantation the coolies are said, by Mr. Titcomb, to be much better laborers than the natives ; they take much pains in cleaning the coffee, as well as all their various employments. Thus far the experiment of introducing laborers from China, has exceeded the most sanguine hopes of the planters. A second lot is expected in all June, by the Thetis, Capt. Cass, by which nearly 200 more will be added to the number employed. They seem to have but little value for life ; one on Mr. Titcomb's plantation cut his throat ; one on Hale Maile plantation, East Maui, cut his throat, and one died of a fever ; one, a domestic of R. C. Janion, in Honolulu, Oahu, cut his throat. So that three have committed suicide.

It has been suggested that a tariff of labor will produce more labor than the common method of drudging through the day, at a snail pace, and an indifference whether work be accomplished or not. Regularity in daily labor will, beyond a doubt, bring out more work, than promiscuously setting the people to their daily tasks. The natives are stronger, and for heavy work, in getting timber from the mountains, or working in the water, are the better help. At this time the ability to procure help from China is a subject of vital importance to the present planters, as well as the future. The voyage may be perform-

ed in four or five months, wages are low, food cheap, and people, as a whole, industrious. Foreigners, Europeans or Americans, are very expensive ; quite too high wages are demanded, and in a plurality of cases are paid. Overseers ask the highest wages, from eight hundred to fifteen hundred dollars a year, with board and lodging ; far too high, considering the nature of his services : merely carrying on a large farm, for which, in the New England States, very few receive more than four hundred dollars a year. The best overseers are from the northern and middle States, so far as experience has gone upon these islands. Yankee perseverance and go-a-head character, bear down many difficulties, which most persons, who have long served on plantations, in the West Indies, where every facility is at hand, would consider impracticable, if not irremediable.

A sugar boiler is necessary for making good sugar. The art is not difficult to obtain, as is evident, from the fact, that the plantations, have, on a plurality of them, been their own self-taught manufacturers. Those who call themselves "Boilers" call for salaries much too high for their practical services. The future looks bright, so far as procuring labor is concerned. With prudence and economy, energy and perseverance, the planters may look forward to the supplying California, Oregon, and Russian settlements on the Asiatic and American shores of the Pacific.

ESSAY,
ON THE PREVENTION, AND ERADICATION OF WORMS.
BY WM. DUNCAN.

Mr. President—: I consider the safest guide we can make use of in conducting an enquiry into the best means to be made use of for the extirpation of those insects which are found feeding upon plants and young crops, will be to examine the practice that has been so successfully followed in the old countries. It seems to me possible a principle might open out, which would tend considerably to diminish the evil complained of, if not exterminate them.

In all new countries, particularly in the warmer latitudes, the destructive effects of insects have been a great loss to the first cultivators, and have often interrupted the progress of cultivation; still we find in proportion to the quantity of land brought into cultivation, the evil diminishes, and when the heavy expenses, consequent on the breaking up of new ground has passed away, and a better state of culture goes on, the devastation of insects is scarcely known of. In developing the views I hold on this important subject, I make use of no reasoning, that has not been fully borne out by their results, or my own experience in new countries would not justify. In reference to the various recipes that have been recommended for the destruction of insects lime, salt, soot, phosphate and carbonate of lime, have been held up as the most efficacious.

I believe, at the present time, their application is confined to solitary cases, and it is a matter still doubtful, if any advantage is obtained from their use, unless as manures, and then subject to the nature and properties of the soil.

I can with great certainty say, as far as the experience of a garden goes, no advantage appears from their application. The first person who commenced the extirpation of insects upon principles which subsequent experience proved to the most correct, was MR. BALDWIN, the author of a Treatise on the Pine Apple. Horticulture in those days, was in its infancy, compared to what it is seen at the present time. In those days I speak of, science had not mixed in the professional education of gardener; the nature of soils was little understood by them, and their amalgamation less.

Before Mr. Baldwin's time, and long afterwards, so strong is prejudice, the practice followed in cultivating the Pine Apple, was growing it in a sandy soil, in a dry atmosphere, dipping the entire plant two or three times a year in a mixture of oil, soot, sulphur, and soap-lees for the purpose of keeping down the insects, which to exterminate in those days, was not hoped for, much less expected.

Mr. Baldwin initiated a practice just the reverse, and may be considered the father of Pine Apple growing in Europe: his practice was to grow the pine apple in a strong loam mixed with as much sand only as admitted a free passage to the waterings, in a moist atmosphere induced by steaming.

Mr. Baldwin's was kept free from insects, and its fruit would average from eight to ten pounds, instead of two and three, the weight of the former culture. Now here was a principle made clear, that plants in a bad condition were infested with insects produced by a certain culture, and the same plants in a good condition were kept free, and this change brought about not by favorite nostrums, but by cultivation alone. Before I proceed any further with my observations upon this interesting and important subject, permit me to explain to the Society my own views. I speak advisedly, I speak from the experience of new countries, from the experience of practiced agriculturists in them, that in no possible way can insects be destroyed, but by cultivation, though the contents of Apothecaries' Hall should be emptied upon the land. But on the contrary, I am certain, from constant watchings, that any material that will destroy insects, will destroy vegetation first. I have mentioned the case of the Pine Apple, as being continually infested with insects, when under artificial cultivation, as was followed before Mr. Baldwin's time, in order to show that good husbandry alone is required to stay the progress of insects, if not ultimately to exterminate them.

The plan I have laid down for the exposition and elucidation of my observations is the following.

1st: I aim to prove by practical illustrations, that any practice which is not based upon good husbandry is ineffectual in diminishing, or in destroying insects.

2d:—I aim to prove by similar reasonings, that good husbandry alone is sufficient both to destroy, and effectually exterminate them.

In Great Britain, that the table of the wealthy may be as well supplied in the winter as in the summer months, fruit trees and vegetables undergo what is termed, artificial cultivation. Now it might be supposed, that plants, within the limits of a small Hot-House could be easily kept free from insects by manual application ; but the case was the reverse, it seemed to increase them, and subsequent experience proved, that such really was the case. Before the introduction of hot water into forcing houses, they were heated by coal fires through the medium of brick flues. Now the advantages appertaining to the hot-water pipes, over the old brick flues are these :—The former gives out a moist temperature, which is of the first importance to healthy

vegetation ; it is regular, and under control, while the latter gives out dry, harsh heat, ever varying, subjecting the plants to sudden overflowings of sap, and at other times, to an insufficiency ; consequently, the health of the plant was impaired, and became immediately infested with those insects which are fostered in a dry atmosphere, such as the scale and the red spider, so prevalent on these islands. Plants growing in a temperature produced by the hot water, arrive to a better condition, and give out no food to insects. Thus the practice as introduced by Mr. Baldwin, in the case of the Pine apple, was found fifty years afterwards to be applicable to all the departments of gardening, with the same success as regards the destruction of pernicious insects.

About forty years ago, the Apple orchards of the cider counties of England, felt severely the ravages of what is termed American blight, having obtained that name from the supposition of its having originated in that country, identified as the Aphis lanigera of naturalists. This insect in a few years reached every apple tree in the country. The means made use of by the proprietors and others, was to have the trees well washed and anointed with a mixture of train oil, soot, soaplees and sulphur. As long as the trees were laboured on, they were kept clean above ground, but they simultaneously appeared on the disuse of the brush, the trees sickened, the fruit becoming smaller, flavorless, and speckled, certain indications of diseased roots. It became necessary to investigate more closely, to find out the habits of the animal, and to learn its habitats. It was ascertained to make its appearance first at the roots, causing large nodes at every joint, stopping the free circulation of the sap ; hence the smallness and diminishing flavor of the fruit. Now here was a disease threatening the existence of every apple tree in England, every garden and orchard being more or less infected, every known means was exhausted, and of no avail in counteracting this scourge. It was advised, that the most affected trees should be removed and many proprietors, acting upon that advice, destroyed some of their most valuable trees ; still the insect was on the increase. In Great Britain, that a full dessert should be afforded throughout the year, the apple is grown against walls and espaliers ; consequently to fall in with the higher state of cultivation, four things were essential, flavor, size, form and color,

to obtain which all depends upon cultivation. Gardeners when compelled to the enquiry by the failure of what may be termed local application, discovered, like Mr. Baldwin, with the Pine Apple, that means that will assist the growth of a plant, are the only means that will destroy or prevent the attack of insects.

Apple trees against walls and espaliers were found unaffected or in some cases only slightly, while the orchards within a few yards were becoming annihilated. Here was the remedy found, apply the same cultivation to the one as you have done to the other and the result will be the same.

Now it appears to me, the inference to be drawn from the fact of the trees being more or less infected in the one case than in the other are these, that vegetation carried on under impoverished circumstances, which is tantamount to bad cultivation, induces ultimately, disease, and it is proved by innumerable examples that insects are only found upon sickly and bark growing plants as they are only found upon sickly animals. It will be easy to trace out the causes of the appearances of insects, by tracing out the causes which induce disease. Then if these conclusions are correct, the same remedy will apply to every department of the vegetable economy.

If we examine the cultivation of the orchards of England in former times, the above reasonings will be further illustrated. We find the practice to be the following. The land was constantly under green crops, for six or seven years, or until the trees began to shade, when it was laid down, or allowed to go into grass. They received no pruning, unless thinning, or lopping off some strolling branches may be called pruning. Now as soon as the trees received any check from a dry season, or exhausted soil, (brought on by coarse and heavy cropping,) theywould bear beyond their power, disease would ensue, then the insects would appear.

The insects were already there, the long grass and weeds were their nurseries, and what better habitat could the insect require to shelter and sustain its progeny than decaying and decayed vegetation could afford? Such was orchard culture in former times, when insects were doing well. Returning to the means gardeners made use of to destroy the apple blight the orchards were placed under cultivation, they laid bare the roots of the trees, as much as was safe; cut them

back to increase their fibres, in order that the sap should be better distilled, added more food by annual coats of manure, and above all, placed the land in fallow. In a few years, the trees recovered from their consumptive condition, and the insects disappeared. My observations hitherto have been confined to the management of the Aphides as being one of the most destructive family of insects Pomerian vegetation had to contend with, and which had baffled for so many years the most skillful and experienced, but at the present time, offers no resistence to a judicious and well managed husbandry. Two other families of insects known to cultivators, by the name of the Thrips, and Red Spider. These insects are endowed with a constitution suitable to all climates. They attack the leaves of the plant, destroying its essential qualities and bring on a state of vegetation favorable to the appearance of others.

Leguminous Plants are subject to these destructive insects more than other family of Plants. Peas and beans in their commencing stages of decay are never in any country free from them; wherever the bean and pea will grow there will also be found the Red Spider; the peach and vine are also their favorite food.

The practice of cropping the peach borders, went on as long as the sorts cultivated were confined to the Royal George, and others of equally as coarse a kind, but as soon as the French Peaches were introduced, being more delicate in flavor, more tender and fine in growth, the insects attacked them with such force, that it was impossible to mature a crop. The Garden Engine was set to work, lime water, and tobacco water were worked over them but were ineffectual in clearing them away. As soon as the fruit was advanced, the engine could not be used. They again would appear destroying the bloom of the fruit, and rendering it colorless, small, and of no flavor.

The practice of cropping fruit borders has been abandoned for some time. They are kept free from weeds, periodically trenched, manured, and thrown into fallow, the whole of the winter months; and that husbandry has worked out every insect of those families from the Lands End to Johny Groats.

Before the time the knowledge of the influence the atmosphere had upon soils had reached gardeners, they allowed their lands to rest and

the weeds to grow, believing their being dug in was highly enriching to the soil, never dreaming of the fertile nurseries of slugs and bots it was fostering. In those days, nothing was heard of but the destruction of spring crops, and often lucky was that individual, who could obtain a sprinkling of a crop, if the season was unfavorable. After repeated sowings and plantings, if the season was wet, the bots and slugs would prevail; if a dry one, the plants would be devoured by the caterpillars and fly. Then the favorite remedies might have been seen: lime half an inch thick spread over the land, and soot if obtainable used equally as liberal. The animals would retire till the rain came on, and soon made the crops reward them for their fasting.—Such was gardening years ago; now we will look into the practice of horticulture at the present time, under which practice, insects of every destructive kind—have disappeared from all well managed gardens. Cross cropping has been entirely abandoned. Young crops are kept clean from weeds, flat hoed two or three times during their growth, for the purpose of destroying all insective larvæ that may be buried, the exposing of it to the atmosphere seems to destroy its vitality; therefore, the constant moving the surface of the soil to about four inches, is of the greatest importance, independent of its other benefits. As soon as the crops are removed, the land is immediately cleaned, and all decaying vegetation burnt or removed, not dug in, and if not immediately required, the land is thrown into fallow.

I will now enter into the practice of the flower garden which affords a field of detail, under a variety of circumstances, and where opposite culture will show both the bane and antidote. It often happens, for certain ends, it is necessary to throw a plant into a diseased state, for the purpose of originating a different coloured, or variegated foliage. As soon as the plant is brought from good cultivation into bad, on comes the insects, and the injury the plant sustains from their attacks confirms often the tendencies of the plant. If we look into the three divisions of plants usually appropriate to the flower garden, we find flowering shrubs more subject to insects than herbaceous plants, and herbaceous plants more than annuals; and again, we find single flowering plants more disposed to insects than double; and without entering into the physiological cause, it is sufficient to seek the solution in

the difference of the vegetative energy of the three structures, and the high cultivation bestowed in bringing out a double flower.

Thus for example, to obtain a double flower, high cultivation changes the stamens into petals, still higher changes the entire organs of the flower into petals; it then becomes what is termed a double, flower and from that cultivation insects are not seen; relax the cultivation, the plant becomes again single and the insects may appear. Thus a single rose plant, surrounded with doubles, will be covered with insects, and the double perfectly free. I allude to the stock; the same circumstances may be noticed in the wall flower and many other plants. I consider these examples will go far in proving that insects are to be destroyed and prevented by cultivation. It is the practice in raising plants for the flower garden, by cuttings, by layers, or by seeds, to be two or three times transplanted before final planting, and where pots are to be obtained, to have them potted. The practice will appear judicious when we consider the purposes aimed at. It often happens, that a plant is required to have its locality changed, and by having it transplanted, which we are enabled to do without danger of its dying, we have fibrous roots instead of tap roots.

Fibrous roots act more freely, and quickly recover from the exhaustion consequent on removal, while on the other hand a plant having its roots to form before the sap elaborates, looses its acidity, becomes sweet and immediately infested with insects.

It is often found in practice, that some plants will not flower under the ordinary treatment, particularly tropical plants. And when bending and twisting the branches, or cutting the roots will not bring on flowering, the general method used, is to check the growth of the plant, by impoverishing the soil, and to keep it under that treatment, till estivation does appear.

If the insects are in the neighborhood they will be on the plant, but as soon as the plant is returned to its former treatment and recovers from its exhaustion the insects will leave it. It appears to me highly important in keeping a flower garden free from insects, to have the plants transplanted before final planting, and to have the soil flat-hoed. I believe it can safely be predicted by such management here as in other countries, insects will be kept from being very troublesome in flower

gardens. I will now enter into the practice of the nursery department. That portion of it which is devoted to the sowing of seeds and their first year's growth of seedlings.

The insects which formerly were so destructive to nurseries in former times, also submitted to the same management, as was found so well to answer in the kitchen garden. This insect is called the Black Bot, in the common language of trades. These insects are never seen above ground, and only work in the night. They retire during the day deep into the soil. They bite off the young plant at its collar, and draw the tops into their holes. Nurserymen in the neighborhood of pasture land could not raise seedlings; but were compelled to purchase them from nurseries freer from them; such as light, sandy soil; thus loosing a very profitable part of the business.

The following means were used and were found perfectly successful. The land intended to be used for seedlings, was first green cropped, the hoe liberally used and kept free from weeds, and thrown sharp and well hollowed, furrowed by the spade, during the autumn and winter months, and in sowing in the spring the seeds, and ultimately been cleared away.

Some years ago, a great difficulty was experienced in Great Britain in keeping lawns free from the working of worms, which gave to the grass an unsightly appearance. Lime water was used with some success, its application was attended with too much labor. The brush, harrow, and roller, answered the purpose much better. Their use not only kept the grass clean, but it was discovered it brushed up the larvæ of insects, which soon would have found their way into cultivated land. It gave a hint to the farmers in the management of their pasture lands; at present, they are used on all grass lands, producing important results in invigorating the grass, and keeping it free from the lodgements of insects.

I have gone through the several departments of horticulture, giving general illustrations of means used in clearing of insects, all leading to one specific principle, namely, cultivation; and though some insects might appear not included in the rule, I do not conceive there can be an exception.

I allude to the insects that infest the hop, and the one that injures

the bean. They confessedly are insects which the best husbandry has not reached. We find their appearance is consequent on wet seasons; in the average seasons no injury is sustained. The causes I conceive are these; the plants subject to vicissitudes, brought on by variable and chilly seasons, lose their full condition, and become predisposed to routine attacks, and the impracticability of working the land, favors their increase. Again the fly in turnips may be considered not controlable by cultivation.

Cropping is a remedy. No gardner or farmer would sow turnips after any green crop.

Phosphate of lime however is used with eminent success. I have in the above observations confined my remarks to the several departments of gardening, as the operations carried on there seems to me more tangible, and would enable us with some certainty to deduce inferences, from which a practice might open out if not to the wishes of the society, at least ameliorate the evils complained of. The best cultivation that lands devoted to agriculture can receive, compared to what can be devoted to horticulture, must of necessity be in favor of the latter, and from that circumstance, many difficulties in regard to insects, more accessible in the garden than in the field. Yet on the other hand, we find the insects of the field less persistent, and the ganera more limited, than in the garden, and if the garden can be kept clear, and I have attempted to show the possibility reasonable, hopes may be indulged that it is as possible in the field.

In the first few years of the colony of S. Australia a small martis cleared every thing before it, scarcely a vestige of vegetation was left above ground. Those who have never seen, can have but a meagre idea of their quantity by comparing them in numbers to the Locusts of Egypt. As cultivation went on, the plow and tormentor destroyed their nurseries; and at the present time, if they were not fully exterminated, they are only partially felt. In bringing the practice that has been so successful in clearing away insects from the garden to bear upon the cultivation of the two staple crops of these islands; the coffee and the sugar cane, I feel it necessary to explain briefly, what I mean by cultivation. I conceive a plant to be under cultivation, when its organic structure is perfect; and to surround the plant

with the requisite conditions to reach its maximum development, the art of cultivation.

Mr. Rhodes, in his able paper on the coffee tree, states he might recommend the sowing of a coffee plantation, if the insects did not prevent him. I do not call that cultivation. I believe it is impossible to surround the plant afterwards, with its maximum condition; it is the plant still in a wild state, without the essential properties which cultivation gives. Mr. Rhodes dwarfs his plants by the knife, but the roots ought to do it. The gormandizers are to come off by the same means. Surely that is not cultivation. That is simply trimming your plant, lest the strong shoots should underdrop the weaker ones. The structure of the plant is still the same; its tendencies are not changed; the maximum developement the plant reaches is still the condition of the wild plant; it is not the condition of an organic structure resulting from cultivation. Mr. Rhodes recommends suckers to be planted, as they will be too far advanced to be in danger of insects. I doubt much the judiciousness of planting a spurious production such as a sucker, seeing it is a formation resulting independent of the proper organs of the plant.

Thus time must be lost in bringing cultivation to bear upon it, and at all times will be disposed to throw up similar spurious productions. The best method appears to me to get up a coffee plantation without the fear of insects, is to have your plants three or four times transplanted; but a much better plan is to have the plantation formed from cuttings, as is practiced in the Brazils. The structure of the plant is already formed in the cutting, and there is little danger of running wild. But without entering into the reasons of either method, let it be sufficient to say, by transplanting you bring the plant to the organization of a cutting, though much time is lost in sowing the seed, you can never reach it, and never perfectly obtain it from a seedling. The following numbers will show the value of transplanted plants over a seedling. We take five as the seedling which will be its commercial value; once transplanted seven and one half, twice transplanted fifteen, three times transplanted forty-two, which is the valuation, independent of size or age, but more to the purpose. The ground being prepared after Mr. Rhodes's method, as soon as the functions of the colydelons have ceased, prick them out two inches apart, allowing six inches be-

tween the rows; if the land is not adhesive add lime. When the fibrous structure has commenced which will be in about eighteen days, transplant them four inches apart and eight inches between the rows, water the night before. In three or four weeks the fibrous structure will be confirmed. In taking them up a third time a small spade or gardener's trowel may be used. In transplanting a third time, plant six inches apart and eight inches between rows. In six weeks if a little spade is used, they will be ready for planting, and if care is used in preserving the balls of earth, no deaths will occur particularly if you watch, and they will be too far advanced to be in danger of insects.

By such a practice you will have brought the plant out of its wild state.

You have a cultivated plant to cultivate, and in proportion to the facilities you afford to the plant by cultivation will be its maximum development.

In the observation which I have to offer upon the sugar cane, I do not feel myself empirically confident, and tho' this paper set out ostensibly suggestive of means to be used for the destruction of insects, it turns out rather means suggestive to be used as preventatives, and as cultivation seems to me the very means that can contend with these evils, in presuming to offer observations on the sugar cane in the face of so many practical cultivators of that plant, I wish it to be my apology.

The first operation I would suggest in ploughing a plantation would be to have the land worked by the skim plow, say to the depth of four inches, for the purpose of turning up all larvæ of insects which are generally found at that depth below the sedge. I then would have the tormentor follow instead of the harrow; by using the tormentor instead of the harrow much labor is saved in burning. I then would commence burning, making my fires from six to eight feet apart. I shall by that process not only destroy a vast quantity of insects, but also a large quantity of weeds and their seeds. Other advantages are obtained by the burning the sedge and weeds. It appears to me land that has never been under cultivation requires some stimulant to bring on active vegetation, which can only be done by the atmosphere, a process of time, or by the addition of manure.

If young plants are planted or seeds sown on ground newly broken

up, that is to say virgin land, the young plants wither and exhibit symptoms of ill health. The chlorophyle of the leaf does not form in sufficient quantity, on which depends the health of the plant; and it is only after the soil, sun and air have exerted some influence that the plants are enabled to commence growing. It is at this stage that the insects are most destructive. The ashes of the sedge by being strewn over the land previous to ploughing, sets the soil to work at once and the young plants, finding sufficient food, are soon pushed out of danger of caterpillars and earth-worms; and moreover start with a good constitution, healthy and strong. I am well aware of the objections to burning and of the advantages of ploughing in green manures, but these objections do not appear to me to bear upon the soils of these islands under these present circumstances.

The ashes being strewn over the land, I would use the subsoil plow if the land would bear it, to give a bottom to the soil. I then would fallow my land and keep it in fallow till broken up by the hoe.

In planting I would open my furrows with the subsoil plow, and have it so managed that no furrow should be left unplanted that day. The advantage of single drill planting over all other methods is so well understood that it is unnecessary to explain it here. On these islands it seems to me more urgent as a matter of economy with regard to labor and as a means of destroying insects.

In open lands commencing growth is exposed to too much light, and from that circumstance the strength of the plant is retarded, the crop does not cover so soon, drought is sooner felt. In drill planting the young cane has more shelter; if the land is light and dry you can plant thicker; if seasons turn out to be wet you can thin out, in fact you can work the crop according to the means the seasons afford you.

In drill planting you have a more even moisture. The crops will be more even instead of having large and small plants indiscriminately mixed as is the case generally in the other method. But no less useful is the drill planting: you will clear your ground sooner of its insects and a great deal of labor will be saved in keeping down the weeds and those circumstances alone will give a greater bulk and a better material for the manufacture of the sugar.

The consequence is that any land that is brought to the surface is immediately covered with earth.

After the same manner seeds just bursting, instead of perishing, are simply lifted from one spot to be deposited in another without materially injuring them.

The labor of keeping drill planting would stand seven and one half and equal distance planting ten and one half, which is a practical fact. The hoe in drill planting works in a straight line; the earth is not curled up and any larvæ of insects that are brought to the surface, die by exposure, and by the same means any seeds just opening that are brought to the surface are destroyed. Thus two crops are destroyed by one operation, and if the circular hoe was used instead of the square clogging up hoe now in general use, the work would be done much better and last longer. In planting the cane, it occured to me it would be a good plan to prevent the cutting of the earth-worm to have the cuttings hardened by a previous cultivation. I mentioned the suggestion to a gentleman who had been largely engaged in the cultivation of the sugar cane on these islands. It was that gentleman's opinion it was practicable, and would be of eminent service in stopping the depredations of the worm. I am pretty certain it would do much in strengthening the crop and would make it more hardy. Puddling the cuttings in a mixture of lime, oil, sulphur, and strong soap suds and earth would keep off the insects for a time, and would be of great advantage in pushing on the plant, and more so if a small quantity of guano could be added.

In keeping a sugar plantation free of insects, the adjacent land requires to be attended to. Caterpillars travel for their food. They seem to issue from the cocoon at an orifice and travel in a straight line till they find something to eat when they spread. I have seen the caterpillar travelling nearly a mile in length over a clean fallowed land without deviating from a straight line. They found nothing to eat, and on they went. They all perished before they reached any cultivated land. They do not appear to have the organs of smell very strong, or they would have fell upon a springing crop of wheat which was about 12 yards parallel to their line of march. I would recommend the land surrounding a sugar plantation to be either kept in fallow or to be burnt and when the caterpillar is expected, I would torment the grass to some distance, brush harrow and roll it while they were in the neighborhood. Insects should have no peace or rest from

me. I would keep my land as a good housewife keeps her house. I would brush out every hole and corner. I have mentioned the disuse of the common harrow in preparing land for cropping. It seems to me totally unfit for working land of these Islands, and does a great deal of harm in preparing land for a second ploughing, or in covering in seed. Porous lands in all warm countries particularly in countries subject to drought, by being harrowed, lose sooner their moisture and from the smooth surface it brings on, affords no shelter to the piercing rays of the sun; consequently shoots are weak and spire up without stooling; whereas land worked by the tormentor or plough, locks up in the roughed surface moisture already prepared for the young springing plant without the means of escape. The young shoots penetrate these rubbly clods and draw out their moisture which by being worked has been rubbed down by the harrow and have escaped. For those reasons it is the practice in many countries to plough in all grain crops instead of harrowing them in again. On these Islands the land cakes and receives little benefit from the slight showers when the rain patters against hard ground which the harrow brings on. The drops of rain burst before they can penetrate the ground and their constituents escape again into air. Although moisture may be afforded still it has to be prepared before the plants can use it.

In concluding my observations permit me to bring once more to your notice the following facts. I have endeavored to prove in the case of the Pine Apple that there is a state of vegetation highly favorable to the appearance of insects. I have also endeavored to show in the case of the Apple-blight a similar circumstance, and both cases by changing the mode of cultivation has brought on a vegetation which afforded no inducement.

It occurred to me since I wrote these observations that it would be well to explain the theory of transplanting when a plant is produced from a seed. The rhizoma or root descends deep into the soil and the sap it sucks up is not acted upon by the atmosphere. It ascends the plant in a crude state; it is distilled by the leaves and descending forms wood. The returned sap is excrementitious and is exhaled from the roots by the knobs; it is again sucked up slightly modified by additional matter. In course of time this sap becomes too impure and too strong and is one of the principal causes of the diseases of plants,

their premature decay, and originates those gormandisers mentioned by Mr. Rhodes.

Transplanted plants have a fibrous structure and act upon the atmosphere in the same way as the leaves; they distil the sap before it enters the plant, consequently take up less of foreign matter. The plant is increased by double distilling, the sap is of a finer quality, contains better sugar, hence its increase specific proof and the essential oil which gives flavor is more perfect. Plants also exude this returned fluid from the stem branches and leaves, hence the insects crawl up the stem branches in search of it and as long as the plants furnish them with food they remain, stop the supply and they are off; from the same cause the smutty appearance of the leaves and stems of plants. This matter vegetates a minute fungus which may be brought on the plant by insects and they are always found together or by the atmosphere the spongy places are full of them; it submits to the same treatment as the American blight. Dark leaves being more subject to them than light is easily accounted for by the difference of energy of chorophly of the colors. Thus leaves in shady situations have this powder in greater quantity. The faculty that plants have in expelling the returned matter by the roots is the theory of Ranton crops and many other beautiful arrangements of the vegetable world.

REPORT ON STATISTICS.

HILO, HAWAII, 20th May, 1852.

R. C. WYLLIE, ESQ., Chairman to collect Statistics.

SIR:—As one of the committee on Statistics I have the honor herewith to transmit you a report of our proceedings in this district for the year ending with date the which should it serve no other purpose will at least I trust be admitted as proof that notwithstanding the insignificance of our ways and means, and the numerous disadvantages we labor under the charge of slothfulness cannot be laid at our door.

During the past year we have had but one arrival from the coast of

California, the reason for which I presume may be attributed to the fact of there being scarcely sufficient inducement for visits from that quarter until about the ensuing month and as we are yet unable to compete with the northern quarter of our Island in its attractive trade of Irish Potatoes. We cannot consequently for the time being allow ourselves to hope for an extension of our export trade in that quarter. But I am sanguine enough to look forward to a time when through the desirable medium of good roads and various other embryo improvements together with an addition to our foreign population of some intelligent and enterprising men our district may so far outrival the various others of the Island as its magnificent harbor and prolific soil fairly entitles it to do. In saying this much in its favor I would not be understood as conveying any depreciation of the various districts in question; doubtless they are blessed by the same beneficent Providence with their several natural advantages and combined render the Island of Hawaii as a whole one of the most valuable of the Sandwich group. While its scenery, its subterranean fires and its variety of climate are so well and widely known as to stand in no need of comment from my unworthy pen.

Since the Report which I had the honor of laying before the Society last year no material change has occurred in the district if I except the addition of a sugar plantation commenced lately under the auspices of some ploddingly industrious Chinamen. The fact is, no material improvement can reasonably be expected to take place until our roads be rendered more suitable for the transmission of produce and the numerous ravines which lay between the most prolific portion of the district and the harbor are made available to this end. This most highly important object is in a small way and after a fashion in course of accomplishment and I earnestly trust that the present session of the Legislature will not terminate without due consideration being extended to our wants on this head.

I have taken the liberty to forward to Stephen Reynolds, Esq., sundry samples of a variety of produce which I have requested that gentleman in his capacity of Vice President for Oahu to lay before the Society at the approaching meeting.

Though somewhat tardy and out of course in compliance with the Resolution stating that "it shall be the duty of the several Committees

"to communicate to the Chairman of such committee an individual "report &c., at least *one* month before the annual meeting of the So- "ciety," I trust I may be pardoned on the score of the irregularity of our Coasters, the arrivals and departures of which admit of no calculation.

Begging reference to the enclosed Report,
I have the honor to be Sir,
Very respectfully
Your obedient servant,
B. PITMAN.

STATISTICAL REPORT FOR THE DISTRICT OF HILO, ISLAND OF HAWAII, FOR THE YEAR ENDING WITH DATE.

Amount of goods imported by whaleships and admitted free of duties,	$8711 47
Amount imported by whaleships subject to duties,	2775 67
	$11487 14
Amount transhipped being products of the whale-fishery, on whalelmen's privilege free of transit duty,	$7484 40
Total number of whaleships for the year commencing with October 1751, to date,	74 vessels.

Memoranda of Produce furnished them.

149 Cords of Firewood	$ 1191
1350 Barrels Irish Potatoes	3375
1750 do. Sweet do.	3500
3700 Pumpkins	370
1550 Bunches Bananas	387 50
2900 Gallons Molasses	522
3000 lbs. Sugar	150
31,200 lbs. fresh Beef	2184
1000 lbs. Coffee	125
	$ 11805 50

Exported Coastwise for the year ending with date

640,000 lbs. Sugar
45,000 Gallons Molasses
74,000 lbs. Coffee
7,500 Goatskins
22,000 lbs. Arrow Root.

Total number of foreign arrivals at the Port of Hilo for the year ending with date—

American Whaleships	73.
Bremen do.	1.
American schooner from San Francisco,	1.
"St. Marys," Sloop-of-War,	1.
	76.

STATISTICS.

As a member of the Committee on Statistics, I beg to offer the following statement of the principal articles of domestic produce exported as cargo, from 1844 to 1851 inclusive; and a calculation of the number of Cattle, Horses and Sheep on this group, made up from information received from persons residing upon the different Islands, and engaged in grazing.

The tables from which the following statement of exports has been made up, have already been published here, but have not been put together before in such form as to admit of an easy comparison of one year with another.

In consequence of the annual meetings of the Society being held at different times of the year, it is impossible to give the amounts of exports between the times of the meetings in such way as to be satisfactorily compared, therefore I have chosen to give them for each year commencing with the 1st of January.

	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.
Sugar, lbs.	513684.	302114.	300000.	594816.	499533.	653830.	750238.	21030.
Molasses, gals.	27026.	19353.	16000.	17928.	26978.	41235.	53855.	13631.
Syrup "	3026.						75577.	60111.
Coffee, lbs.		248.	10000.	26943.	56065.	28231.	206428.	27190.
Salt, bbls.	2810	1272.	8500.	15549.	4570.	2866.	6000.	3719.
Irish Potatoes "				545.	147.	858.	51957.	43933.
Sweet " "						306.	9631.	7217.
Onions, "						$1246.	1858.	2315.
Arrow Root, lbs.	6200.	43863.	10000.	6411	1413	*	9632.	19499.
Hides, no.	2536.	940.	2000.	3452.	1927.	2512.	20241.	2172.
Goat Skins "	30637.	9918.	35000.	20360.	31180.	31488.	24983.	26717.
Tallow, lbs.	*	4000.	*	17236.	4180.	17403.	3703.	4588.
Total Values,	$49,187 90.	31,390 85.	46,595.	68,418 58.	66,819 43.	89,743 74.	380,228 63.	197,888 94.

* Note. The amounts being small were not given by themselves, but were included in the value with sundry small articles.

The exports of sugar in 1851 were *very* small, amounting (as you see by the table,) to only 21,000 lbs. against 750,000 lbs. for the year before, owing principally to the excessive quantities and low prices of sugars in California, whither nearly all our exports look for a market. The severe drought in some parts of the Islands, and the embarrassed finances and failure of some of our planters in other parts, in 1851, has very much lessened the amount of sugar and molasses which would otherwise have been in market now, and for which fair prices could now be obtained in San Francisco. The quantity of sugar exported in 1852, thus far, amounts to about 250,000 lbs.

The exports of Coffee in 1851 were small also, owing to the same cause which affected the trade in Sugar; but we hope for a larger export this year, though the quantity on hand is rather small.

The exports of Potatoes and other vegetables, which previous to 1850 were next to nothing—during the years 1850 and 1851, were our most valuable product, but have now dwindled down to a small figure again, and unless the crops of California and Oregon should be destroyed by drought or some other improbable cause, our vegetable trade with California will henceforth be trifling. Let us at least, try to produce an abundance of *good* vegetables for our own consumption, and to supply, at fair prices, the vessels that visit our ports.

About 5000 bbls. of salt have been exported since January 1st '52, and the quantity for the whole year will probably exceed that of any year since 1847.

Wool is an article which might be and ought to be produced in considerable quantities on these Islands. According to the outward manifests, the whole quantity exported during the last eight years does not exceed 2000 lbs.

There are a number of articles not included in the above table, of which considerable was exported during the years 1849, 1850, and 1851, but, little, compared with what there might be, and probably will be, when we have the advantages of steamers to ship by, viz: Fowls, Swine, Pumpkins, Melons, Bananas, Pine Apples, Oranges, Lemons, Limes, and, (if we can learn to cure them properly,) Figs.

The number of Cattle, Horses and Sheep, of all ages, upon this group, as nearly as I can ascertain, is as follows:

	Cattle.	Horses.	Sheep.
Hawaii, (tame)	8000.		
" (wild)	12000.	1200.	3000.
Maui,	3500.	2500.	1000.
Molokai,	200.	200.	
Oahu,	12000.	6500.	5500.
Kauai & Niihau,	5000.	1300.	700.
	40,700.	11,700.	10,200.

The cattle known as "wild cattle" on Hawaii are estimated by different individuals at from 10,000 to 20,000. I have put them down at 12,000, which is probably less than the actual number.

It is stated by graziers that the natural increase of the heads of cattle on these islands is at least thirty per cent. per annum. Taking 40,700 for the basis of calculation and it gives an increase of 12,210 for the present year. The whole number slaughtered and sold fresh will not exceed 3,210, (judging from the number of hides exported yearly, the number slaughtered altogether appears to be less than 2500,) leaving a net increase of 9000. The quantity of beef sold fresh has probably been as great during the two years last past, as it will be for a number of years to come, so that unless there be a decided check put upon the increase, or large quantities of beef packed for exportation, the cattle, together with the large herds of horses, will soon overrun the islands, put an end to the cultivation of the soil, and render the herds themselves, of little value.

Since writing the above, I have heard the very interesting and comprehensive report of our Hon. President, and find myself in part forestalled; and having for chairman of our committee a gentleman notorious for his ability and industry in collecting and arranging statistical information, I did not expect to have even a corner of the subject left

for me to occupy, but fortunately he has directed his forces to another and much more important part of the field.

Respectfully submitted by

CHAS. R. BISHOP.

REPORT OF THE COMMITTEE ON NEAT CATTLE.

The Committee appointed to report on Cattle, beg leave to submit the following observations and notices of the past year to the R. Hawaiian Agricultural Society. The committee feel much pleasure in remarking an improvement in this department since last year. A very considerable number of cattle have been slaughtered during the last twelve months in Honolulu, of which the unusually large proportion of females must of course have a tendency to keep the decrease more on a par with the increase than it has hitherto been. Several of the large stock owners have very considerably reduced the number of their bulls, the consequence of which will be that a great number of the cows now in their herds, after having reared the calves now at their feet or of which they are now heavy, will become fat, fit for the butcher, and when they are gradually slaughtered off will leave about an equal number of young stock to supply their places. The advantages of this system must be obvious, inasmuch as without any sudden diminution of the herd, the old stock becomes gradually marketable while its place is being supplied by the young stock. If the stock owners who are adopting this plan will, after a year or two, select their best heifers and procure good bulls for them, they will in a short time have herds superior to any now on these Islands.

The committee have much pleasure in noticing that during the past year two young Hawaiian bulls have been shipped from Honolulu to China and hope that Hawaiian cattle may hereafter be exported to other countries to improve the breeds now in existence in such countries. With such good pasturage and a climate so favorable to cattle,

it depends only on the exertions of the cattle owners here to render their stock worthy of being so sought for.

The foreign cattle alluded to in the report of last year have continued to thrive and increase in number. Although producing and rearing a calf each year the cows are fat enough for the butcher.

The committee have to express their earnest desire that the Legislature will enact some regulations compelling those cattle owners who are too indolent, too ignorant or too careless to castrate their bulls at a proper age, either to do so or to keep their bulls on their own land. It is hard on a man who spends time and money on the improvement of his herd to have all his work undone by the laziness or mismanagement of his neighbors. If there were a penalty of Twenty dollars for every stray bull, half to go to the general Revenue and half to the party who suffered the damage it would probably be an inducement to cattle owners to cut their calves, besides conferring a boon on the residents of Honolulu and the shipping taking in supplies there, because most people have a prejudice in favor of ox-beef or heifer-beef over bull-beef.

The arrival of steamers at these Islands will be a benefit to cattle owners as creating a demand for their Tallow, at present an unvalued article here. It is an indispensable article for machinery and sells for that purpose in San Francisco at from 15 cents to 20 cents per lb. As bulls, no matter how good their condition may be, never carry kidney-fat, those stock owners who supply Honolulu with bull-beef will be spared all the trouble of rendering or disposing of their tallow.

In conclusion the committee would earnestly inculcate on all cattle owners the necessity of improving the breed of cattle and of cautiously abstaining from the too prevalent error of overstocking the land. If any one who is in possession of a land capable of carrying five hundred head in good condition allows his herd to increase to six hundred head, it must be obvious that he cannot do so without reducing their condition in a corresponding degree. The food sufficient for only five hundred head cannot keep six hundred in good order. He has consequently fewer beasts which he can turn into cash. As all these Islands are stocked, the only purchasers to be calculated on are the slaughterers, and as it costs more in men and horses to look after a large herd than to take care of a small one, and as hungry cattle from

an overstocked land commit more trespass than well fed cattle who have abundance of feed on their own run, it must follow that the expenses are increasing while the proceeds are diminishing. And yet there seem to be stock owners who think that wealth consists in the number of their cattle, without taking into consideration their quality, condition or capability of being converted into cash.

JOHN MEEK.
CHARLES GORDON HOPKINS.
H. SEA.
R. MOFFITT.

REPORT OF THE COMMITTEE ON WORMS AND OTHER INJURIOUS VERMIN, BY W. NEWCOMB, M. D.

The examinations of your Committee have not resulted in the classification of the various worms destructive to vegetation, nor to a full investigation of their habits. To make a satisfactory report would require a very large amount of labor and study; more than your committee have had time to devote to this department, far more than a superficial view of the subject would indicate.

Most of our worms so called, are removed from the class Vermes and belong to the true insect tribe, though in their larvæ caterpillar or grub state they produce their destructive ravages on vegetation. It is well known that the moth sphynx and butterfly, previous to becoming perfected, have existed in no less than three other forms, viz: the egg, the larvæ, and the pupa or chrysalis, all of which require to be carefully studied as well as the perfect animal.

An accurate drawing of each species should also be made in their various forms by which uniformity of names could be obtained and the ravages of one species not be ascribed to another; nor half a dozen different species receive one name. No correct or authentic information of the habits of a species can be obtained but by extensive observation at distant points and on different Islands simultaneously. These

observations to be reliable must be certain to be made upon the same species of animal; and their results might then lead to the most successful plan of checking their increase and destructiveness.

We have but *two* species of butterfly—a large and small one—the first (Venessa cardui) was introduced it is said at the same time with the Argemone Mexicana (poppy or thistle) and is too uncommon to produce much disturbance to the agriculturist. The smaller species is more common but has not yet been examined.

There are three species of *Sphynx*—the largest the Sphynx pungens is common in the neighborhood of Honolulu. The smallest has been noticed only on Molokai. A drawing of the larvæ and pupa of the other two species has been made and will be recognised by those present. Of the smaller *moths* seven species have been noticed and to these the most careful attention should be given as they form the true enemies to the agricultural interests. They have not been studied with care nor their transformations noticed.

VERMIN DESTRUCTIVE TO VEGETATION AT HAWAIIAN ISLANDS.

WORMS. I. The cut-worm—called by natives Pokoenuhe or pelua. (There seems to be no specific names among the Hawaiians for the different sorts of worms.) On Maui the term pelua seems to cover the whole tribe which contains many species.

On Hawaii, poko is perhaps a worm which burrows and pelua is one which does not.

I. One species of cut-worm—the most destructive—is striped, about one and a quarter inches long. It is either found coiled up in the earth by day or immediately coils itself on being discovered. It comes to the surface to feed only at night, and is found most abundant at 8 o'clock P. M. It usually cuts off young vegetation, but does not seem to devour while any remains standing—or perhaps it lives principally on juices.

II. Another species whose habits are much like the above is black and about the same length but less destructive and less frequently found. It frequently cuts off young plants in the day time beneath the soil.

III. Another species more abundant than either of the above in the districts which it inhabits works incessantly, it would seem, day and night, eating indifferently almost everything which comes in its way,

stripping off leaves and bark, and sometimes even the stalk itself of herbaceous plants. This worm is about the size of the two former. It is this worm which does so much damage to cane.

IV. Is a black worm with a white stripe underneath about the length of the three kinds above but more slender. It lives entirely above the surface and cuts off the grass while in season, but its season is very short.

A long storm sometimes effectually destroys nearly the whole of these so that for years they do not recover their numbers.

The above I consider the most important as obstacles in the way of successful agriculture at the Islands, but a vast number remain which are more choice in their selection of food and oppose less serious obstacles.

Corn Fly. This is a small fly or louse which insinuates itself between the leaves of corn and similar plants and appears to effect the partial or total destruction of the plant by sucking its juices.

Red Spider. This is an almost microscopic insect which covers over the leaves of many plants and either effects their entire destruction or causes them to fade and become useless to the plant. Many thousands sometimes inhabit the same leaf.

A microscopic fly called by the natives Ponalo, is very destructive to melons, leaves and many other plants which seem to fade away without any cause. A very close inspection with the naked eye will discover the little white active thing flitting about among the fine down of the leaves. In a still time it may be seen floating about in the sunbeams.

Were the above all removed from the islands nothing serious would remain to obstruct the labors of the farmers.

A light vegetable or alluvial soil is much more troubled with the worms above described than a harder and more compact soil.

In addition to the above there is a small worm of about one inch in length, which in the rainy portions of Kauai infests the Tobacco plant and often proves quite destructive, eating its way into the centre of the stalk and producing its death.

From the samples of Tobacco and cigars the produce of that Island, no doubt need be entertained of its becoming a profitable and successful staple of the Islands, in which case too much care in studying the habits of this insect cannot be employed.

The sweet potato is occasionally drilled by a *true worm* corresponding to our ideas of the wire worm of the United States and excites disease in this vegetable that destroys it for culinary purposes. It is however not common. I have not been able to detect a true *aphis* so destructive in Europe and America to fruit trees, upon these Islands.

The introduction of insectivorous birds into the country would doubtless tend to repress the excessive multiplication of many of the worms named. They find in the domestic fowl and Turkey a formidable enemy at the present time. I noticed the past summer at the residence of Mr. J. H. Brown on Waikiki plains the activity of a large number of fowls which found steady employment in destroying millions of moths constantly alighting within his enclosure. For every moth thus caught, some thousands of the cane worm were destroyed in their embryotic state.

It is a wise provision in nature that when a destructive animal or insect becomes so prolific and numerous as to endanger vegetation to any very alarming extent, a compensating conservative power is provided for repressing their numbers.

The numerous ants filling our soil are found by the experiments instituted by Mr. Sawkins to play an important part in the destruction of the larvæ and pupa of some of our moths—and compensate in this manner for their trifling depredations upon the sugar bowls of our industrious housewives.

Scarcely a new plant or tree can be introduced into the country without introducing one or more new species of insects; so that should our horticulturists be eminently successful in beautifying our scenery by the introduction of new shrubs and trees, new materials will continue to be furnished for the researches of our successors in the entomological department of the Royal Hawaiian Agricultural Society.

REPORT ON WHEAT, CORN, OATS, AND OTHER GRAINS.
BY J. S. GREEN.

MR. PRESIDENT and Gentlemen of the Royal Hawaiian Agricultural Society:

To those of you who have resided at the islands more than twenty years, I need not say that the article which we once used as bread-stuff, was of an inferior quality. You recollect that there was often a scarcity of flour, and also that from some cause, what reached us from the U. S. was barely tolerable, occasionally too poor for feeding swine. On opening a barrel stamped "*Flour*," a chisel and mallet were always put in requisition to prepare the way for sifting, and these even were so ineffectual oftentimes that a pick-axe or crow-bar seemed necessary for the work. In those days the demand for Saleratus was imperious —the constant and free use of it indispensable. If one found on removing the head of his barrel that the flour was not musty, he felt quite satisfied, though he might marvel that bugs and worms could have had patience to perforate so hard a substance, and though he might find his flour well nigh sour enough to set on edge the teeth. In this case a double dose of saleratus, when we could obtain it, was the only remedy. I have little doubt that the ill health of many of the early residents at the islands had its origin in the character of the flour which was imported from abroad. Indian corn was raised at that time by the Hawaiians, but sold commonly and eaten green. I do not recollect of seeing corn meal in any considerable quantity during the first ten or twelve years of my residence at the islands. Neither oats, barley, nor any other grain, so far as I know, up to 1832 cheered the eye of the traveller as he made his way over the plains of Hawaii. Up to this time no experiments in this line had been made, and the general opinion seemed to be that neither the soil nor climate of the Sandwich Islands was adapted to the raising of cereal grains. It seemed likely that we should always have to depend on foreign lands for our bread. To this supposed necessity all of us became more reconciled as our foreign flour has improved in quality from year to year till it is now very good. Still there was no ground to hope that the people of the islands could ever use foreign flour, for hitherto some, if not many of the poorer foreigners have obtained only a partial supply.

Not far, I think from 1835, while I was living at Wailuku, a native of Kula, near the base of Haleakala, came to me one day with a Hingham box, and removing the cover he asked me to see and tell him what he had there. I looked into his box, and great was my pleasure on seeing some two quarts of fine looking wheat which he had raised. I told him its name and value; purchased it, and charged him to sow again, also to tell his neighbors that they too might cultivate it. This, I believe, is the brief history of the introduction of wheat into the Sandwich Islands. I regret that it cannot be known to whom the natives of Kula were indebted for the few grains of wheat which enabled them to bless the country with so useful a product.

It was several years after I purchased the few quarts of the Kula native before wheat became so abundant as to be sold by the barrel, or even by the bushel. I used occasionally to see it growing in small patches, and I observed that it was of large growth and of excellent quality. The grain was sometimes carried to Lahaina. This I learned when travelling on a particular occasion through Kula. I sought a little seed, wishing to try the experiment of raising it at Wailuku. All I could find was a small quantity, say about a peck, which enclosed in a strong cloth was used as a *uluna* or Hawaiian pillow. It was then introduced at Wailuku, Mr. Bailey raising two or more crops. It grew very well, the berry was fair, but for some reason, the flour was decidedly inferior to that raised in Kula. Of late years none has been sown at that place.

When in February 1843, I removed to Makawao, the pledge having been given me by the people of a support so far as anything they could produce from the soil was concerned, I told the Kula people that I should need ten bushels of their good wheat for my family use. This they furnished for two or three years. I soon found, however, that the raising, or rather the cleaning of wheat, was a costly service. The grain they rubbed out on rough lava stones, and the chaff they blew off with their mouth. As they could earn much more by cultivating the Irish potato, even when sold at one dollar per barrel, I concluded to try the experiment of wheat-growing at Makawao. I planted in drills about one acre, and though I lost some of it by the wind throwing it down, and by the rats, yet I gathered twenty-seven bushels of excellent quality. Finding that I could raise the grain easier

than they, the people of Kula began to relax their efforts in this department of labor. In the winter of 1846, some eight or ten of my neighbors living near the borders of Makawao united in planting a field which they called "Palaoa Mahina Hou," or monthly concert wheat, being planted and tended on portions of the first Monday of the month, the proceeds of which being devoted to benevolent objects. When this was ripe I called out the cultivators, and introduced the sickle. Most of the wheat I reaped, but I allowed all who wished, to try their hand at this novel business. The women then rubbed it out, and being cleaned, we obtained some 12 or 15 bushels, if I rightly remember, of superior wheat weighing 62 and even 64 pounds per bushel. These were the last wheat cultivators in Kula with a single exception, and this one I deem worthy of particular notice.'

An old gentleman by the name of Kupanihi, an uncle of Mrs. McLane, a man of indomitable industry, formerly a head man on the land now owned by the Rev. D. Baldwin of Lahaina, became famous for the cultivation of wheat. His place being in sight of my house, I used frequently to visit him, and feast my eyes with the sight of his beautiful patches of grain. The cultivation of wheat was admirably adapted to the declining strength of this old man. He had youthful hands about him to aid in breaking up his "fallow ground" which he planted in furrows. His wife aided him in keeping it clean from weeds, the remainder of the labor he could himself perform. And such wheat I have seldom seen. When ready for market it was well nigh as free from foreign mixture as Genesee wheat descending into the hopper of some Rochester flouring mill after having ascended five stories, and having been through as many sifting and cleaning operations as Yankee ingenuity ever devised. His patience and perseverance were above all praise. Well, after the old man had cleaned awhile, he would fill a couple of small calabashes, measuring a peck each, and staff in hand, would make his way for Mr. McLane's or my house to dispose of his load. I always purchased whether I had a supply or not, giving him three reals per peck. Thus Kupanihi toiled till about 1849, when the increasing difficulty of obtaining aid to prepare his grounds, and his increasing debility of body and mind caused the oo to drop from his feeble hand. I scarcely need add, that this Hawaiian hero of 80 years did not long survive his useful labors as an agri-

culturist. He went down to the grave like one of his own shocks of wheat, fully ripe. Honor to the memory of good old Kupanihi the indefatigable agriculturist and wheat grower of Kukuiaeo. I may as well add here that this man raised sugar cane, and had manufactured at his own door the first molasses made on Maui.

Excuse this long story. I continued to raise wheat in small quantities, but I found much difficulty in threshing and cleaning it. Messrs. McLane and Gower, Mr. Miner also have raised excellent wheat, but neither of them, I presume, have realized much profit, having neither threshing machine, barn-floor, nor fanning mill. Hitherto, after the wheat has been cleaned, it has cost more than its value in dollars and cents to grind it. I think I may safely say that up to this date, no foreigner has raised a bushel of wheat at less cost than $4,00. I trust this will not be true in time to come.

Mr. Edes introduced the cradle in 1848, and assisted me in harvesting my wheat in the summer of that year. Ere the season of sowing returned he was off for California. During 1849 and 1850 I raised but little more than we needed for seed. In the autumn of the latter year, a farmer from New Hampshire came down from the coast and took up his residence at Makawao. He wished to purchase land but as there remained none unsold in our neighborhood, he concluded to occupy a portion of my land for raising sugar cane, Syrup and Sugar at that time commanding a great price. He put in some twenty acres of cane, and eight or ten of oats, of which we had a large crop in 1851. Finding that sugar and syrup were not likely to command so high a price as he had expected, the farmer commenced last November sowing wheat, and continued to sow and plant up to March. He thus put in some 25 acres of this grain, 5 or 6 of which are harvested, a specimen of which I presented you yesterday. I think there will be 400 bushels of the wheat, perhaps more. But for some circumstances over which I had no control, and in consequence of the destruction of some portion by the pelua, we shall not probably realize so much by 100 bushels as we otherwise should have done. Much of it is of large growth, and some portions are what a western farmer would call *stout*. Indeed so heavy is the grain in spots that it has fallen down, and we shall obtain only 20 of the 40 bushels which an acre would probably produce.

One of my neighbors, a Dane, has about two acres of the same grain from seed which we furnished him, and he will have a respectable crop. He has also a patch, say one eighth of an acre, of barley which promises fair, and from which we all hope to obtain this useful grain. Another neighbor has about one half an acre of wheat, which, though once eaten down by the pelua, is now nearly ripe, and is as even and beautiful as any half acre in the place. Mr. Miner also has two or three acres planted in drills principally, which looked well when I last saw it. I know of no other wheat in Makawao at present.

Of oats I cannot speak so favorably as I did last year, though the partial failure has no connection with the soil or climate. On commencing plowing the field where the last year we raised a heavy crop, the farmer found that the land was well seeded, and he concluded to try the experiment of raising a second crop without re-sowing. The result was we had a heavy *body* of oats, but comparatively small crop of the *grain*. Of these oats I gave you a specimen yesterday. This grain can be produced in our region of country in any quantity.

In the raising of corn I have been less successful, the difficulty, however, is not in the soil. The season proper for planting is so ununcertain, and the ravages of the pelua so great, that I sometimes well-nigh despair of ever succeeding in cultivating this important grain. True, I have for many years obtained corn enough for our table, boiled or fitted up into that most delectable of all dishes, succotash ; and I have sometimes cured a little for hasty-puddings, johnny cakes, and brown bread. In 1849 I succeeded in obtaining several bushels of corn with which I *feasted*, not to say *fatted* the largest crop of weevils I have ever seen at Makawao. Still I cannot boast of success in raising Indian corn, and I must refer you to other members of the committee. Mr. Rice of Punahou has more than once succeeded in raising fine corn at that place. He tells me, however, that of late corn has not done as well as formerly ; and he is not sanguine as to entire success. He is still making experiments as to the season of planting, destruction of the pelua and other things connected with corn growing.

Mr. Emerson has probably more experience in the business of raising corn than any one of the committee. His report is as follows :

CULTIVATION OF INDIAN CORN.

BY J. S. EMERSON.

The Indian corn crop succeeds the best, so far as my experience and observation go, in a hard tenacious soil. This soil holds moisture much longer than a light vegetable or alluvial soil. It also gives less chance to worms of all descriptions for burrowing and depositing their eggs than is found in a lighter soil. Also, in case of a high wind it holds the roots of the corn much more tenaciously than the lighter soil.

The season for planting is from the 1st November to the 1st of February or March. Except in very low and wet, or rainy situations, the sooner corn is planted, after the first rain in November, the more sure the crop. But in very rainy situations or in low lands exposed to be inundated by the usually heavy rains in December or January it may be safe to delay planting till the heavy rains have fallen.

PREPARATION OF THE GROUND FOR PLANTING.—Let the land to be planted be plowed deep and fine, if may be, in midsummer, and let fowls and pigs scratch and root it as much as they please, to destroy roots, worms and insects; and to facilitate their operations an occasional harrowing would not come amiss.

When the season for planting has arrived a second plowing would be beneficial. Then furrow the land both ways in drills, about 4½ feet apart, and plant the corn in the checks. Four or five grains should be planted in each hill, with the expectation of leaving only three or at most four stalks, when the corn may have passed its danger from the grub-worm.

The danger from the grub-worm is less in November than in the two following months; and corn that has been growing a month or six weeks has generally passed the season of danger from this insect.

If the corn to be planted is soaked twelve or fifteen hours in a strong tobacco juice it will hasten its germination and may protect it from the attack of the worm.

About twelve or fifteen days after the corn is planted it is usually fit for the cultivator, which should be passed between every two rows in one direction and one week later in the other direction. But if the land is not in good condition a light plow is better than the cultivator; and in using the plow the soil should be turned from the corn into the middle of the space between the rows.

When the corn has been six weeks in the ground it is usually a foot high as it stands and is sufficiently strong to endure a slight shock from falling dirt. It is now time to re-plow, turning the soil towards the corn. Let it be plowed both ways, two furrows between each two rows, a boy always following the plow to relieve any corn that may have been crushed or buried up by the plow. When this moulding process is completed the hoe may be taken up.

Pass through the field removing every weed that may be among the corn, and every poor blade of corn where there are more than three in the hill. If there chance to be four good stalks in one hill and four only, let them all remain. At this time let the hill of the corn be shaped and the ground be left fair and in a condition to impart its greatest amount of nourishment to the corn. The hill round the corn should never be high, but large and flat. This one hoeing is all the corn will need, in case weeds do not spring up.

If the manienie grass or the seeds of noxious plants are in the soil when planted you will find it out and meet them as the case may require.

The manienie grass, the best friend to the grazier, is a potent enemy to the agriculturist, and must be met and fought in the hottest and driest weather, or the plow and the hoe will avail but little in a tenacious soil and wet weather.

The expediency of topping the corn before it is ripe depends entirely on the desirableness of the food for your cattle or horses. It is no benefit and but very little, if any, harm to top the corn after the tassel begins to dry and the husks of the corn to whiten.

A good crop of corn at these islands is from 30 to 40 bushels to the acre. I have raised at the rate of 50 bushels to the acre.

Corn that is acclimated I think does better for seed than that which is newly imported from the Northern States.

Craving your patience a little longer let me now speak on some things connected with the general subject.

1. On the adaptation of our soil to the raising of such grains; a question which, as a committee, we were instructed to examine. There can be no doubt so far at least as Makawao and Kula are concerned, the raising of wheat and oats is no longer to be regarded in the light of an experiment. Through all Kula, and in the hill coun-

try of Honuaula and Ulupalakua, on the potato land above Mr. Torbert's plantation, wheat would unquestionably richly reward the labor of the cultivator. If cereal grains are not grown at the islands in sufficient quantities for home consumption, to say nothing of a moderate exportation if needed, let it not be said that it is from want of adaptation of the soil.

2nd. Time and manner of preparing the ground, planting, &c. As the experiment of raising wheat may be made on other islands than Maui, allow me to give you the result of my experience as to *time* and *method*. I think it well to commence sowing or planting as early as November or December. Sown thus early, wheat will have time to take root, and will become large tall and hardy. If occasionally fed down in early winter, by calves, no great harm will be done. I would not, however sow a great quantity thus early, but continue to sow at my convenience up to the end of March. The growth will all be respectable. The portion sown in November will probably be ripe early in May, so that by sowing every week during the winter the work of harvesting will extend through July and August. As to preparation and manner of planting, I remark that there is little danger of plowing the land too thoroughly. The crops so far as I have observed amply repay all the labor bestowed by the plow. In regard to the manner of committing the seed to the earth, I am partial to the method of planting it in drills. At the outset it will doubtless cost more labor, but that it will ultimately cost more is not clear. The land will of necessity be better plowed, the seed will lay deeper, and be more certainly covered. The body of the grain will be stouter, the heads better filled, and there will be much less danger of the wind and rain which frequently throw the grain down or entangle it. The drills on rich land may be about as near as a horse followed by a small plow, can make them without walking in the furrow last made. By planting thus, one can walk through the length of his field, prevent weeds from choking his grain, and the rats from making unreasonable depredations; and finally, the grain is more easily and cleanly harvested. Since writing the above, I find the following remarks in the "Pictorial Cultivator Almanac," for 1852:—"The practice of sowing wheat in drills, is every year gaining favor, and this system of sowing is destined to become general. In England the system is already so well

established that it has been pronounced the 'sheet anchor of husbandry.'" Those however, I will add, who are disposed to cultivate wheat can try both methods, the broad-cast and the drill, and decide for themselves which is on the whole, the best.

I for one, earnestly desire a change of seed, for though our wheat which is the bearded kind is good, still I have no doubt that a change would be beneficial. Cannot seed be obtained from the coast, or from the United States? If from the Northern States, the first crop or two might yield less than our Hawaiian wheat, but as soon as acclimated, we should probably have larger crops, and grain of a better quality.

3rdly. Obstacles to wheat, oats, and corn growing and preserving.

These I have shown are not found in the soil of Hawaii nei, though some or all of them may be with the climate. Nowhere probably can wheat and oats be more easily raised than on many parts of the islands. Obstacles however exist; for to success in what business are these not found? We might about as well murmur against Providence for not giving us our bread baked and buttered, without the toil of oven heating, dough kneading and churning, as to complain that we cannot obtain our wheat and corn without toil and vigilance in warding off and destroying the enemies of vegetation. Of these enemies, the pelua I have already mentioned. We all know the character of this insect, and have most of us been tried by its ravages; but 'tis one of the trials incident to the labors of the agriculturist in an untried climate. We need the influence of a New England winter to check the ravages, or to rid the country altogether of this and other insects. But as the remedy in this case would be worse than the disease, we must bear the trial as patiently as possible, till in good time some one shall discover the method of destroying so dire a foe to agricultural, and especially to horticultural pursuits.

Another enemy to grain of every kind we have in the *weevil*. This will cause us more trouble I fear than the pelua. I need not say that the weevil attacks the grain after it is garnered, and it will find its way through a hogshead, a barrel, or a bag of wheat or corn, in an incredibly short space of time. I know of no method of preserving our grains from the ravages of this insect. Caution in curing and putting them up will do something. They should be most thoroughly

dried, and put up in small containers or bags. The wheat which I formerly obtained from Kula, I used to put into bags containing from a peck to a half-bushel each, and these I hung in the cook room near the stove pipe. I think no weevils were seen in one of these bags unless it became wet from the rain through the roof. If any member of the Society can suggest a method either of destroying this insect or of preserving our wheat and other grains from its ravages, he will confer a great favor on us all.

The rat, too, means to show us wheat growers, that this grain is sweet to his tooth. I hope this vermin will not increase upon us, and rival the pelua and the weevil in destructiveness. As he condescendingly waits till the grain is nearly ripe before he attacks it, I think he will harvest but a small part of our fields. After all, we have fewer foes to our garden vegetables and grains than our friends of other countries have, and we may well endure the ills of this sort which we cannot cure, or endure them till a cure can be effected.

4th. Finally, allow me to say that we all have occasion for gratitude to God in view of the multiplication of physical comforts within a few years; and we should be stimulated by this consideration to encourage, both by precept and example, a more thorough and systematic cultivation of the soil till the best resources of the islands shall be fully developed.

To feel the force of this appeal to our gratitude, let me take you back with me to 1828, the year in which some of us landed at Honolulu and commenced our residence on these shores. Here was our work, and those of us who came to toil for the people, looked for our reward in the coming world. And well we might, for we had little prospect of obtaining it on earth. The fact is some of us were for several years put on short allowance, and I may add, no more *sweet* than *short*. I will not particularize, for no one wishes to talk or hear of such things. Suffice it to say that during some part of 1829 while I was absent on the North West Coast, there was great suffering in Honolulu for want of the comforts of life. Mrs. Green speaks of those days with thankful emotions that she did not die outright of starvation. Mr. Richards and his family, then at Honolulu, suffered also exceedingly as he informed me on my return. I admit that this season was an extraordinary one; still those of us who were on the ground at that time can

testify, that for several years, we needed a good appetite to enable us to keep soul and body together. I refer to those days to remind myself and you also of the multiplication of physical comforts since those years of scarcity. Of the change of living I have often been reminded of late years, when I have seen the well spread table loaded with comforts almost entirely the product of the islands. The well baked beef, roasted turkey, or broiled chicken, with excellent Irish potatoes; the coffee with its rich trimmings, the golden butter, and the cheese fresh and palatable, if not the richest; and the rich wheaten loaf, together with various inexpressibles all Hawaiian and—good enough for any man! Well may we be grateful to Him who enables us to spread such a table. Thousands of such tables might be spread on these charming islands, and I call upon every member of the Royal Hawaiian Agricultural Society to encourage both by precept and example, a more systematic and thorough cultivation of the soil till the best resources of the islands shall be fully developed. For this purpose, let parents who profess to desire the prosperity of the islands, give now and then a son to the ennobling work, the God given employment of tilling the earth, rather than as heretofore, devoting so many of them to the belittleing business of measuring tape, and weighing sugar and nails. I mean no reflection on the regularly educated merchant. Such an one, it seems to me, has ground to complain that so many whom God designed for farmers, have with little or no preparation engaged in mercantile business. "Every one to his trade," the old adage hath it, and there is good sense in this saying. Had there been more agriculturists at the islands for the last few years, and fewer merchants, the depression of the times would have been less severe. I am astounded when I look around for the young farmers among the families devoted to the special work of elevating and saving the Hawaiian race. Who can tell me where *one* even, can be found? Not many months since, we on Maui, welcomed such an one as we supposed, one too who had taken lessons in New England on agriculture, who had studied practical farming. Some of us fondly hoped that our sons would be benefitted by his example and instructions. Most earnestly did I beseech him to hold on to his purpose of cultivating the soil of his island home, though strongly advised as he assured me he had been by all his friends at the metropolis, to engage in mercantile business. As this

young *farmer* is a member of our Society, and may be present at some of our meetings, he can tell us in what business he is now engaged. One of two things is true in relation to us as a foreign community. Either first, according to the old adage, "Misery loves company," so some of the elder children of foreign residents and missionaries having become merchants or clerks, they encourage their juniors to imitate their example, and thus keep them in countenance; or secondly, practical farming is in low repute. The latter is I fear, the true cause that while merchant's clerks, and young traders can be counted by the score, scarcely an individual of this class seems to think even of the plow. Need I say that while things continue thus, while public sentiment discourages youth from engaging in husbandry, the father who would rejoice to train his son to the honorable business of an agriculturist will have his own trials—will be likely to fail. 'Tis easy, on an occasion of our anniversary, to talk and say many fine things; 'tis easy also to write commendatory of this sort of labor, to praise the giant of the "brawny arm," and "huge fist," but 'tis quite another thing to consent to hold the relation of *pater vel mater* to such an ungainly, plainly clad, sun-burnt, rough-handed offspring. Am I not right, gentlemen, in supposing that labor of the agricultural sort is held practically in low repute? If so, pardon me while I solemnly pledge myself to belay you soundly till you shall be ashamed of cherishing any thing like secret contempt for the *primary*, God appointed occupation of man, even in his state of innocency and dignity; and till you who have sons, shall plant one of them, at least, on the Hawaiian soil as a tiller of mother earth. This I shall do the more earnestly as there can be little hope of the perpetuity of good institutions among the Hawaiians unless they become an industrious, agricultural people. In proportion as I see evidence of the nation's improvement in this respect, in the same proportion is the strength of my hope in regard to the future temporal, political, and moral state of Hawaii. And need I say that an *ounce* of example, especially with this people, is worth a whole *pound* of precept. There have been *tons* of the latter bestowed upon the Hawaiian race, to how little purpose the neglected fields around us too plainly tell. Now then for a little increase of good example. If this would not change the whole country, I am greatly mistaken. Is not the experiment well worth trying?

Again I call upon every member of the R. H. A. Society to aid in every possible way in developing the best resources of which the country is capable. With the blessing of God which is never withheld from those who seek it, we might soon see "the fruitful field laugh with abundance." Let us see that these fields be not fertile in their own disgrace. Let them groan with the weight of the luscious sugar-cane; be turned into a wilderness of our unequalled coffee; let the plains wave with the golden wheat; with barley, oats and corn let the valleys be filled; while clover, herd's-grass, and other species shall crown the mountains to satisfy the lowing herds, and the bleating sheep; while the grape, fig, guava, orange, lemon, mango, chirimoya, tamarind and peach, filling our gardens shall well nigh make us forget our father's house and the luxuries of our own country. In a word let the experiment be made of causing to grow on these delectable isles, so far as man can cause to grow, "every tree, and every plant, and flower, and grain, that is pleasant to the sight, and good for food." And though we shall not find "the tree of life in the midst of our gardens," yet who can say that in the enjoyment of these earthly fruits and flowers we shall not find awakened in us the desire of tasting of that "tree which bears twelve manner of fruits, and yields her fruit every month, and whose leaves are for the healing of the nations?" Especially let us determine that "bread," which, gentlemen, we have from high authority, "is the staff of life, and in which is contained the quintessence of beef, mutton, veal, venison, porridge, plum-pudding and custard, and through which is diffused a wholesome and fermented liquor;" I repeat let us determine that nothing on our part shall be wanting to make bread abundant among all classes, not only of the foreign residents but of the native Hawaiians. I am of the opinion that the free use of bread would give stamina and character to the people. Quite a number at Makawao and Kula have engaged wheat for sowing, and they seem determined to re-engage in its cultivation, not only for traffic, but for their own use. My people have lately formed an Agricultural Society, and as the rage for speculation seems to have spent itself, I may be able by another year to communicate on their behalf something of importance. Some of them may possibly compete with us for premiums. May I not suggest to the Society the propriety, not to say, justice of increasing the number

and value of premiums on wheat and corn. Only a single premium, I perceive is offered for each of these grains, and this no more than is offered for a hundred cigars, or for 5 pounds of cured tobacco. Could I offer an amendment to the report of the committee on premiums, I would recommend the putting of TOBACCO with the CUT-WORM, and offering $40 for the destruction of both. If any of us shall be permitted, as was predicted at a former meeting of this society, "to sit under our own vines and fig trees," it will be I trust, for a very different purpose than "to smoke Hawaiian long nines." Most earnestly do I pray that no part of the soil of these lovely islands may be impoverished and polluted by the growth of this loathesome, and deadly weed, nor the balmy air tainted by the poisonous fumes of tobacco.

As I hope to have many a competitor soon in the growth of cereals permit me to suggest that for wheat and corn there be offered a premium, 1st. On the best bushel ; 2nd. On the best acre ; and 3rd. On the best 25 acres. A premium also on oats and barley. I would also recommend a change in the kind of premiums, a substitution of the plow, the sickle or the hoe, for the medal, which, pardon me when I say, has no particular use. Let the growers of *flowers* have the medals, but let the growers of *flour* aspire to something higher—more substantial. Our farms are ill supplied with implements of husbandry, and we need help in this department rather than in the ornamental. Our agricultural libraries are small and need replenishing. Would not the "New England Farmer," or the "Cultivator," or some other agricultural periodical be an acceptable and useful premium.

The state of the highest prosperity which God promised to His ancient people in case of obedience was indicated by reference to agricultural products. God prepared for Isreal a land "flowing with milk and honey," i. e. a country admirably adapted to agricultural pursuits. When obedient, his Creator declared "thou shalt be blessed in the fruit of thy ground, the fruit of thy cattle, the increase of thy kine, in the flocks of thy sheep, in thy basket and in thy store." In the fulfillment of this promise, "He made him to ride on the high places of the earth, that he might eat the increase of the fields, and He made him to suck honey out of the rock. Butter of kine and milk of sheep with the fat of lambs, and rams of the breed of Bashan, and goats, with the fat of kidneys of wheat, and thou didst drink the pure blood of the

grape." Had they been uniformly obedient, it is said, "He should have fed them also with the finest of the wheat, and with honey out of the rock should I have satisfied thee." And in a season of prosperity it is said "He maketh peace in thy borders, and filleth thee with the finest of the wheat." Let all labor and pray, that as we have peace in our borders, we may experience the fulfillment of the entire promise, all have a full supply, from our own soil, of this heaven bestowed, life invigorating nutriment.

REPORT ON HORSES.

To the members of the Royal Hawaiian Agricultural Society:

Since the last annual report we have but few statements to make. We would reiterate our opinion that there should be a limited number of stallions allowed to each district, to be selected by men appointed for that purpose, who are capable of judging of the qualities of the horse—impartial and independent in their choice without regard to the owners. This in our opinion will have a great tendency to improve the breed and at the same time relieve us of the wretched specimens of horses now to be seen on these islands, without apparently strength and spirit enough to take them to their stalls.

We would advise that every licensed stallion should be advertised by its owner through the newspaper, giving his name and the place at which he will stand. Three years is a good age for stallions, and from that to fifteen or twenty. Many think it is far safer on the score of profit to breed from an old stallion, who has uniformly proved himself a getter of valuable stock, than from young stallions who are entirely untried as to the qualities of their progeny—others again prefer young stallions. But we have noticed that both in England and the United States some of the best horses have been from old stallions—and likewise the same with old mares which have bred much, being more roomy for colts.

We are of opinion that the large breed of Sydney cart horses are

not the description of horses required here. They may originally have sprung from the English draft horse, but from breeding in and in, they have come to be miserable long legged, small carcassed animals without any muscle, requiring two or three acres to graze them on, and neither fit for draft or saddle horses; and you have only to notice some now going about our streets with their hind legs going in a contrary direction by compass to their fore, to give you an idea of the worthlessness of these animals.

The proper horses for this place would be the *best breed* of the Canadian horses. They are good for the saddle and draft, and are generally fast trotters. They make an excellent family horse, and will thrive on much less food than the horses which we now have. This breed have sprung originally from Norman mares crossed with the English blood horse. The former were rather small and tough, but by crossing with the English blood, have brought a staunch, strong horse of good bone and muscle from 15 to 15½ hands high, and which are now being imported into all parts of the United States.

We would add that at present there are two good foreign stallions in this place, known as "Oregon" and the "Admiral."

THOS. CUMMINS.
JOHN MEEK.
JNO. O. DOMINIS.

REPORT ON SWINE.

BY P. J. GULICK.

Although the subject of this report is rather repulsive than inviting, yet so long as pork is worth a real per lb, the grunter is by no means an object to be sneered at.

I shall, therefore, to the best of my ability, endeavor to point out some prominent characteristics of what is deemed the most desirable breed of hogs, and the best method of fattening them.

The opinion seems to be entertained by some that swine of the *lar-*

gest frame, or at least such as when full-grown and well-fattened will *individually* weigh most, are of course to be preferred. But it is believed this is a mistake.

If our theory is correct, that breed which will produce most pork of good quality from a given amount of food is most profitable, and therefore most desirable. Now it is fully believed that swine of very large size not only eat more food, in proportion to their weight, than those of middle size, but that their flesh is of a coarser quality and less savory than that of the latter. So far as the writer's observation extends the mass of swine on these islands are long-limbed, with long slim noses, and seem rather adapted for the race-course than for slaughter. There are, however, a considerable number of a better stamp, and some very good.

From what I have said it may perhaps be inferred that I deem the no-bone breed, as it is sometimes called from the smallness of the bones, superior to all others. But such is not the fact ; for they are very uncertain breeders and have small litters. I am not sufficiently versed in pig-ology, to give the name of the breed I prefer ; but will give the prominent characteristics, which may be a surer guide, than a name would be. These are, briefly, a frame of medium size, weighing scarcely 300 pounds when full grown and thoroughly fattened ; short neck, head and nose ; the last, thick, and deeply concave, viz : well scooped out between the eyes and the end of the snout. Lastly, white skin and hair. This last specification may be deemed whimsical ; but I think, though of less importance than the others, it will be found worth some attention. The skin and hair are usually of the same color, and the white skin is commonly, if I mistake not, thinner ; and it certainly has a much pleasanter aspect, on the dish, than the black skin.

One important advantage of swine of the above description is, they will fatten at any age ; whereas the very large, and the slim-nosed races cannot easily be fattened until they are full-grown.

Now, as to the method of fattening. And here let me premise, that *shelter* is a matter of no small consequence, in fattening swine, in order to secure a *dry and cool bed*. It might be thought that in such a dry and mild climate as this, care on this head was superfluous. But such is not the fact. A friend of mine lost a valuable fat sow, merely,

as he thought, from neglect in this matter. Another hog in the same pen was nearly lost from the same cause, but was saved by a free application of cold water. But even where it does not prove fatal, exposure is often injurious. An intelligent man, who resided some years at Kealakeakua, told me that all the hogs which he had known to be grown and slaughtered there had the liver complaint; and this he attributed to the heat to which they were exposed. The liver becomes enormously large, and very tender, and when this is the case the whole system is deranged, and the animal more or less diseased.

Cases of this kind I have frequently observed in other localities, and deem them attributable to this cause. And there can be no doubt but that exposure to a scorching tropical sun must retard, materially, the process of fattening; to be confined day and night in mud and, mortar, as is sometimes witnessed in the rainy season, must have a like result. A dry and cool bed should therefore be provided for swine; and of this the more intelligent natives seem to be aware.

Now in regard to *food*; were a choice allowed, I know of none preferable to Indian corn. But while corn will command the price it now does, or even three dollars a barrel, it is believed it would be a *losing concern*, to feed it to swine. Kalo also is good food for hogs; but except in places remote from market is liable to the same objection as corn, it is too expensive.

As we were informed incidentally at our last meeting, and as the writer has witnessed, the *skimmings* and other refuse of the sugar-house makes excellent pork, and is probably more productive when used for this purpose, than any other of which we have any knowledge.

But neither this, nor any other cooked food, should be eaten while hot. This is said to render the flesh soft and measelly, (as it is called,) which destroys its pleasant flavor. Probably, in these islands, sweet potatoes, pumpkins, and squashes, are the articles which can be most easily and economically grown for this purpose. In one locality potatoes would be most profitable; and in another, squashes, according to the adaptedness of the soil to the growth of each. In order to secure the whole benefit of either they should be cooked. They may either be baked in a native oven, or boiled. Those who use cooking stoves could, perhaps, usually, while cooking for the family, boil a pot of squash for this purpose, without any additional expense.

A word in regard to the *manner* of feeding. Whatever be the *kind of food*, it is wasteful to deal it out, as it were, by wholesale.

No more should be dealt out at once than will be consumed at once. A little observation will enable the feeder to ascertain the proper quantity. And if it is desired to fatten as quick as possible, it will be found advantageous to feed five times in 24 hours, making the intervals as nearly equal as convenient.

BARON DE THIERRY'S REPORT ON BEES.

I have the honor to inform the President and members of the Royal Hawaiian Agricultural Society, that in compliance with the promise given by me last year, I have made every exertion to obtain the Honey Bee for these Islands, and have the satisfaction to state that by letters from New Zealand, received on the 10th of last month, I am promised three hives, by the first vessel direct to Honolulu. I most sincerely hope they will arrive free from injury, and secure all the beneficial results which are anticipated from their introduction. But, in inviting those interesting guests to these Islands, something should be done for their reception, and some pains should be taken to raise plants of which the flowers yield the greatest quantity and best description of wax and honey. Of these none are greater favorites with the dainty Bee than that sweet little flower, the Mignonette, which grows so well here, Lemon Thyme, and Garden Thyme which latter makes beautiful borders to flower beds, and if properly attended, blossoms almost perpetually. They are also fond of the flowers of the cabbage, turnip, and mustard, and particularly so of those of the different sorts of edible beans—the broad bean being a great favorite. Of aromatics there is none so beneficial to the Bee as Rosemary, which thrives well in hot countries. The fame of the honey of Harbourne is due to this valuable plant. The honey of Majorca and Minorca is equally celebrated for the flavor it derives from the Orange and Lemon blossom. The Jassamine and the Heliotrope, which grow so well

and blossom so profusely on these Islands, are much sought by the Bee. Indeed there is scarcely a flower, however small and unpresuming, but from which it derives food. The cultivation of every description of flower bearing plants should be distributed amongst the natives, to whom necessary information on their cultivation should be imparted. From the Strawberry and the Raspberry, from the Hollyhock and the Tree Mallow, much excellent honey is derived, as from every sort of melon and pumpkin. Who that has travelled in England and the United States has not noticed the villa of the affluent and the cottage of the sober and industrious with the honey bearing Woodbine overhanging the neat porch—the white and yellow Jàsmine and the Passion flower, covering the white walls, and the garden filled with many well cultivated and lovely flowers—in the corner, sheltered from the bleak winds, are the hives, with their busy colonies in active employment, formerly doomed to destruction for their honey, but now by the modern improvements in the construction of Hives easily removed without the sacrifice of their valuable lives.

The Bee from sipping the sweets of flowers takes nothing from their beauty, and if we should benefit a neighbor who has bees, whilst we have none, we know that even in so small a degree we are contributing to the welfare of our fellow creature. The cultivation of flowers promotes domestic happiness, soothes the mind, and richly repays for the trouble bestowed upon them. The wealthiest, accustomed to the glare and glitter of state, are prouder of a fine nosegay than of their massive plate and costly silks, and the mightiest of Queens would scarce appear in festive attire without a boquet in her hand or a rose in her bosom, emblematical of the purity of her mind, and homage to the exquisite works of a greater Being above. But, whilst the palace and the cottage—the dwellings of the richest and the poorest, are so eminently improved by this most attractive of nature's vegetable works the indefatigable bee collects tribute from every flower, and hoards its treasure with equal fidelity for the cotter as for the magnate, adding to the comfort and profit of both by its unceasing industry. The little stranger, perhaps at this moment on her way, will be the means of bestowing upon you an important and inexpensive article of export, and in return for such a service, and for the additional comfort which families will derive from that healthful article of diet, and the wax

which she so abundantly produces, I trust that some exertions will be made to raise flowers for her support.

REPORT OF THE COMMITTEE ON THE VINE AND FIG.
BY E. BAILEY.

Your committee on the Vine and Fig have not been able at all to satisfy themselves in relation to the subject assigned to them.

The experiments hitherto made are too few and two little diversified to be relied on as a guide in extensive operations.

We have also as yet been unable to procure from books the desired information.

Figs and grapes have been dried in small quantities at the islands, and are reported to have kept well through a voyage to the United States.

From the Rev. J. S. Emerson we have received the enclosed description of his process of curing the fig—which is all we have to offer.

From a conversation with Dr. Hildebrand I am led to think that the process described by Mr. Emerson is the true process for curing the fig, but he says we are too far south to cultivate successfully the more delicate kinds of Vine.

Drying Figs.—This cannot be done with any certainty of success except in the dry season, generally between May and October. The length of time requisite for the completion of the process of drying is six or seven days—a dry atmosphere and a good breeze, are important in facilitating the work, which may most economically be done as follows:

1. Erect a platform in some airy situation where the sun will shine upon it at least 8 or 10 hours of the day. Let the platform be so high that the chinese or half chinese fowl, if well fed, will not be likely to trouble it; say 5½ feet from the ground. Let this platform be not over 3 or 3½ feet wide, as it will be requisite to reach from either side daily

to turn the figs on the board, or change their location to facilitate drying.

2. Let the figs for drying be picked before they are so soft as to crush each other in the bucket when picked, and yet they should be fully ripe. Let them be placed on the platform one or two inches apart to increase the power of the sun and air upon each fruit. After the first day each fig should be moved from its location to the intermediate space between it and the next so as to occupy a dry and hot place, and this change should be made in the hottest part of the day.

3. There should be a set of spare boards or some other covering that may be thrown over the platform at night or in case of a rain, that will exclude dew or rain, but not air. This covering should always be put on at night, or in case of rain.

The heat of the sun only is adequate for the process of drying the fig. An oven has been tried but without success, except that figs for exportation may be made to keep longer by completing the drying in an oven after baking bread in it.

Figs have been dried here and exported to the United States in a perfectly good state. They also have been kept here one year perfectly good.

Yours truly,

J. S. EMERSON.

REPORT OF THE COMMITTEE ON SALT, BY W. NEWCOMB.

According to Marcet, sea water contains in 1000 parts

26.66	Chloride of Sodium,
4.66	Sulphate of Soda,
1.232	Chloride of Potassium,
5.152	Chloride Magnesium,
1.5	Sulphate of Lime, and small traces of other compounds.
39.204	

In the manufacture of salt it is of the first importance to clear the water from all the foreign constituents except the Chloride of Sodium.

By the ordinary process of solar evaporation as conducted here, this is not effected, and the whole of the solid constituents of sea water are obtained as the result of the solar evaporation. Not possessing the necessary re-agents for a complete analysis of Chloride of Soda, I can but give an approximation to the constituents of the commercial article manufactured at Puuloa.

The test for sulphuric acid (existing in the sulphates of soda and lime,) gives a smaller quantity than the fine table salt introduced for our consumption, and usually esteemed as far more pure.

This unexpected result is highly complimentary to the manufacturer at Puuloa, who has succeeded even better than others in clearing his salt from these impurities.

The Sulphate of Soda is mostly left in the form of bitterns which might perhaps be profitably manufactured by condensation and farther evaporation into Glauber's salts.

The chloride of magnesium is a more difficult substance to get rid of, and we find that in 120 grains of the commercial salt of Puuloa, the amount of this earthy substance thrown down in the form of a carbonate, together with the lime amounts to a fraction short of 3 grains. In the test applied to the foreign article, less than half a grain was obtained from the same quantity.

The experimental tests which I have made leads me to the conclusion that to perfect this important manufacture, we have but to apply the proper remedy for the removal of the chloride of Magnesium, when our salt will be found equal to any manufactured at Turks Island, Liverpool, or on the continents of Europe or America. Fortunately the carbonate of Magnesia resulting from this process will probably meet all the expense attending the separation.

The quality of the salt from Puuloa exhibited yesterday commanded the admiration of all who examined the beautiful samples.

The large chrystals surpassed in beauty and regularity any specimens of West India salt that your committee have ever met with. An analysis of these chrystals give but three eighths of a grain of magnesian and calcareous earths in 120 grains, *or one quarter of a pound in 300 lbs.*

The comparative amounts of the sulphates of soda and lime can be seen by the precipitates thrown down by our imported fine table salt,

the chrystals from Puuloa, and the ordinary Puuloa salt from saturated solutions of the several articles.

In the last named there are other matters precipitated besides those tested *for*.

From the above evidence I do not hesitate in asserting that no salt ever introduced upon these Islands for consumption from abroad equals in purity the large chrystals exhibited at our Agricultural fair.

REPORT OF THE COMMITTEE ON PROCURING SEED FROM THE SUGAR CANE. BY E. P. BOND.

Hon. WILLIAM L. LEE, President of R. H. A. Society.

SIR.—The Committee appointed at the first annual meeting of the R. H. A. Society, to institute experiments with a view to obtain plants from the seed of the sugar-cane, would report that, although some experiments have been attempted for the purpose proposed, yet that, owing to the lateness of the season of their appointment, and the want of facilities for conducting the experiments, they have not yet been successful.

Measures have been taken to import the needful manures for conducting the experiment, and your committee hope that they may at some future time be able to present a more satisfactory report, should it be deemed advisable that they should continue their efforts.

REPORT OF THE COMMITTEE ON SUGAR. BY L. L. TORBERT.

Gentlemen of the Royal Hawaiian Agricultural Society:

Hoping that I may throw out a few hints which may be useful to

those engaged in sugar plantations, I beg your attention for a few minutes.

Although at the present day the properties of cane juice are pretty well understood, and the process of reducing it to sugar is rendered very simple, yet there are so many things, any one of which neglected, that injure the quality or reduce the quantity of the article, that many if not all of us come far short of perfection in its manufacture.

In working our common cattle mills, it is found, by repeated experiments, that we obtain about sixty-three pounds of juice from one hundred pounds of sugar cane.

The converting this juice into sugar is the most interesting and difficult portion of the planter's labors.

The first step in its manufacture is to mix a certain quantity of lime with it for the purpose of separating the impurities from the saccharine fluid.

In ascertaining the proper quantity of lime to be mixed with the juice consists one of the great difficulties which the sugar boiler has to encounter.

If too little is used the syrup does not grain well, if too much, it darkens the syrup and forms an imperfect grain in which the molasses becomes tangled and cannot be separated from the sugar; so that it is a nice point to get the right proportion; and when you have found the exact measure for one lot of cane it may prove to be too much or too little for another lot. There is scarcely any two day's grinding which yields the same richness of juice. But if the juice should always be the same, the quality of the lime used is not always the same; so that it is impossible to come at any rule which will be right in all cases.

There have been several ingenious methods invented for the purpose of adjusting the temper, but none of them as yet are perfect. We have, however, a general rule which comes pretty near the mark.

Put five ounces of common coral lime into 100 gallons of juice as soon as it it is pressed out and stir it well. This quantity will be found sufficient unless the juice is very rich, in which case add a trifle more, or if the juice is weak do not put in so much.

After the juice is limed bring it to within about five degrees of the boiling point over a slow fire, then let it stand fifteen or twenty minutes and scum it. Then give it a quick boil for about ten minutes, scum it

again and stop the fire. Now let it settle which it will do, if boiled right, in thirty or forty minutes.

Many planters object to *boiling* the juice before it is settled, but there is a second dirt in cane juice which only separates at a degree of heat a little above the boiling point, and if this is not separated before the juice is settled, a portion of it cannot be got out except by filtration, which is a very objectionable process, but goes with the sugar rendering it of a darker color and poorer grain.

In well appointed boiling houses the juice is first boiled in large vessels over a separate fire and left to settle in the boiler from whence it is drawn by a cock near the bottom into the pans. But in small works it is bailed off into tubs and left to settle, after which it is run back again into the pots and boiled as fast as possible, skimming it all the time, until a thermometer immersed in it stands at 288°. As soon as it is boiled up to this mark skip it off into a cooler. The shorter the time of boiling, the greater the quantity and the better the quality of the sugar.

After the juice is boiled to 288° and is bailed off from the pans, it is put into a tub or box to cool and grain. As soon as the grain begins to form on the sides and bottom of the cooler, give it a gentle, but thorough stirring, and then let it rest until cold.

After it is cold separate the sugar from the molasses. This may be done in a variety of ways. The simplest method, and which, next to the centrifugal separator, is the best, is as follows. There must be four or five holes one inch in diameter in the bottom of the vessel in which the sugar is put to cool. Stop these with sharp pointed plugs, about eight inches long, leaving about three inches of the big end outside. After the sugar is cold, withdraw the plugs, and the molasses will run off and leave the sugar in the cooler.

These coolers may be boxes containing about 15 cubic feet* or they may be casks of any size, with one head out, and should be set over a drain, in order that the molasses may run to the tank.

When the plugs are removed, if the sugar runs off with the molasses you must insert tapering tins of the same size of the plugs, having their small ends pierced with little holes.

Another method is to put the sugar, after it is cooled, into vats or

* See Dutrone's method in a work by George Richardson Porter.

boxes about six feet long by three high and three wide having slat bottoms, with wheat straw spread over the slats. The straw prevents the sugar from running out with the molasses. This is a bad fix, for the straw soon breeds a small insect which has the appearance of mould, or fine dust, in such quantities as to hurt the sale of the sugar; besides the straw gets mixed with the sugar.

Another method is to put the sugar after it has grained and is cold, into a barrel or tub, the sides of which are made of fine wire, and giving it a quick rotary motion, the centifugal force carries off the molasses.

This is the best way of all others, but caution must be had in buying a machine. If the inside coat of wire is not very fine it will let the sugar out. The wire should be brass so as not to rust.

I have tried some in bags and find that they answer the purpose as well as wire, but it requires care to get an equal weight on opposite sides of the machine, otherwise the rapid motion will shake things loose.

For a plantation that makes one ton per day the barrel of the machine should be three or four feet in diameter, and eighteen or twenty inches high, and should not have less than twenty revolutions to the second. One of this size and speed, with two men to tend it, is capable of drying one ton of sugar in two or three hours.

This machine is not only one of great utility, inasmuch as it enables the planter to dispense with long drying houses, and rows of boxes and tubs; but its chief excellence consists in returning to the boilers, within forty-eight hours after first boiling, all of the syrups and molasses that do not grain, consequently the sugar of the second boiling is not injured by fermentation, as it invariably is when drained in any other way.

After the molasses is separated from the sugar put it back again into the boilers and mix with it five gallons of settled juice and five gallons of limed juice to one hundred gallons of molasses.* Boil this down again to 228 degrees, and go through the same process with it in cooling and separating the molasses as before, and you will obtain about the same quantity of sugar, in proportion to the syrups, as at the first

* The limed juice should be prepared in this way. Mix up some fresh cold juice with lime as you would mix it with water for white wash, and after it has settled, which it will soon do, use the clear liquor.

boiling, and of almost as good a quality. In this way you may reboil the molasses three, four, or five times, each time adding less lime and boiling lower.

It may be said by some that 228 degrees is not high enough to boil the sugar, as it leaves too much molasses. I am well aware that good juice will bear boiling as high as 240 degrees, and the French even boil as high as 246 degrees, but it makes the sugar dark and heavy and the grain imperfect. 228 degrees gives a perfect grain, and light color, and the second boiling is almost as light colored as the first.

Persons who have large plantations will not be likely to receive much information from these remarks. But the new beginner in a small way, who is obliged to do all parts of the work himself, may perhaps be benefitted by them. The principle of sugar making is the same in large establishments as in small ones. We can make as good sugar in a dinner pot as we can make in a large battery.

But whilst the man who works with a mill of two horse-power and makes only 200 lbs. per day affords his sugar in the market at 6 cts per lb., the planter who works with a steam-mill of 40 horse-power, other things corresponding, can afford his sugar at three or four cents per pound.

It seems to me that the most essential qualification for a planter, especially in this country, where we are one day up, and another day down, and the next day we hardly know where, is to be able to adapt his means to circumstances. Although I would not advise a man in carrying his wheat to mill to put his grain in one end of the bag and a stone in the other, because his father did so, yet sometimes, when I have seen a native carrying a stone on one end of a stick to balance a load on the other end, I have thought that, under the circumstances, perhaps, it was the best way.

So let those who have been brought up in sugar making countries, not condemn a way of working because it is different from what they were learned; neither let those despair who are new beginners, because they do not know all the established rules in old countries, but let each man learn the point to be arrived at, and use his wit and ingenuity in getting there.

REPORT ON SHEEP.
BY G. S. KENWAY.

To the President and members of the R. H. A. Society.

GENTLEMEN:—Although I profess to feel as anxious as anybody that each member of this Society should do his duty, especially when some particular duty is pointed out and assigned to him, by the general wish, I felt a good deal puzzled on seeing my name placed a second time at the head of the committee to report on sheep, and it occurred to me that the infinity of other subjects embraced by the science of agriculture might (with all respect I say) have been taken better advantage of. For although in Nature there may be nothing new under the sun, "age cannot wither her nor custom stale her infinite variety," and the charm of novelty might have been as agreeable and possibly as instructive to our present meeting. I had determined not to report this season, and incur the charge of neglect rather than *twice* essay to entertain or instruct a company amidst whose intelligence mine must needs shine with a very smoky light, by the wonderful things that might be said on the stupidest animal in all creation.

But the exhibition on Wednesday and a slight circumstance attending it, coupled with a very friendly request from our untiring president, have prompted me at this late hour, and in the absence of any communication from my comrades whose deplorable forgetfulness I cannot account for, to offer a few remarks—on one single point only connected with the subject.

Three sheep only, very young ones, were exhibited in the early part of the day, owned by Mr. Sea. Two Merino ewes imported from Sydney, and one half breed, reared near Honolulu. These poor unconscious little things, standing there almost unnoticed by the crowd, damned with faint praise if praised at all, and dripping wet with the salt water they had passed through, looked and doubtless felt little and humble enough in the presence of those illustrious bulls and so forth who carry away prizes with such monstrous ease and indifference as to astonish the Judges themselves almost, and could not have presumed to entertain the remotest idea that *possibly* (and without profanity,) in them and their seed might all the flocks of Hawaii be blessed.

Mr. Sea comforted himself delightfully on being at least quite sure of *one* prize, *because* there happened to be no competition. It was

quite a pleasure to hear him. Yet his confidence might have stood on higher ground, for as far as I am able to judge, his sheeep had finer wool and prettier forms, and were better bred than any I have seen before on the Islands. But to his sudden consternation, there appeared later in the day two large black beasts of a foreign breed and very mysterious pedigree, intending of course to compete for the prize. They reminded me of many things, but chiefly of that serious and quaintly proposed query in the old nursery rhyme which I could not help repeating to myself—"Ba! Ba! black sheep—*have ye any wool?*" Something of the sort covered their big carcases, and very likely enclosed the making of capital mutton.

Now this is the point I am striving to come at. Are we going to raise sheep on these Islands for mutton alone, or for mutton *and wool*? That is the question. For we *can* have good wool, and good mutton, *first rate* mutton inside it. And we can raise enough sheep on these Islands to make mutton a drug, which *wool never can be.* And we can set heads to plan and hands to work, as well as mouths to feed on the produce of our pastures, and point to our stock not with the grunt of an alderman gloating over a turtle, but with the pride of intelligence endeavoring to approach perfection.

Wool from Waimea has been sent to Sydney during the last year and with very good result. It is the opinion of an old colonial wool grower, Mr. Sparkes, that finer wool can be raised here than in Australia, and that the pasturage and grounds, though limited, are better. And I know that he speaks from the trials he has already been able to make in improvement by care and breeding.

Then, let us not "yield the easily persuaded eyes" to the charming visions of mere huge *mutton.* But, beginning at the beginning, let us ascertain and *acknowledge* our true deficiencies and set about repairing them in such a way that it shall not be said in after years we started on the wrong road and got so far that we don't know our way back.

Now is the time to consider and determine what we ought to do and *can* do, for

> "In the morn and liquid dew of youth
> Contagious blastments are most imminent."

P. S. In speaking of Mr. Sea's sheep, I do not wish it understood as my opinion that they are the best on the Islands. Other parties,

Mr. Moffit for example, have imported pure breeds, doubtless as good. Mr. Sea's are the best I have seen.

REPORT OF THE CORRESPONDING SECRETARY.
BY J. MONTGOMERY.

To the President and members of the R. H. Agricultural Society:

In submitting my report for the past year as Corresponding Secretary of this Society, I think it more conducive to convenience, to include the result of my duties as librarian also, because much of the duties which have devolved on me have relation to the library.

Shortly after the last meeting of this Society, the brig "Usk" arrived from Liverpool bringing the box of Books for the use of the society, forwarded by Messrs. Dickson & Co., of London, in fulfillment of an order from my predecessor, Mr. Bond. The amount remitted for purchase of these books was £12 10s. English currency, but which left a balance due of £1 13s. 4d. which I have requested a friend in London to pay.

By the "Andes," from Boston, which arrived here in the month of September, I received another box of books, also ordered by my predecessor from Mr. G. W. Bond of Boston U. S. The length to which your proceedings this year are likely to extend induces me to forbear adding a catalogue of these books to my report.

By the direction of the Executive Committee I have procured a suitable book case to contain these books, and they are now at the service of the members of the Society in my office.

From the Secretary of the Van Diemen's Land Royal Society I received a long and very interesting letter expressive of the anxious desire of that society to co-operate and reciprocate with this society, and to render us any assistance or facility in their power. He also forwarded the transactions of the society for the three previous years which contain much valuable and interesting matter. He promises to send us a swarm of Honey Bees when a suitable opportunity should offer,

but from the cessation of intercourse between that Island and this for many months past, I presume no such opportunity has since presented itself.

Mr. Berthold Seaman, the naturalist of H. B. M. S. "Herald," who visited this place in 1850 and was appointed a corresponding member of this society, has written to your corresponding secretary stating that he is now resident at Kew, near London, preparing for the Government the result of his labors and promises to aid the views of this society which it seems to me his position will enable him to do.

Mr. W. Hooper of San Francisco, has forwarded a splendid work on Cottage Architecture, in two volumes, published by H. Ranlett, Esq., and by him kindly presented to this society, which he desires may be open to the inspection of all who feel any interest in the subject.

A few days ago I received a letter from Mr. J. E. Chamberlain of William's College on the subject of the introduction of the "Honey Bee," into these Islands, which seems to me so interesting and important that I feel called on to subjoin the following copy of it.

WILLIAM'S COLLEGE, March 22d 1852.

Sec'y of Hawaiian Agricultural Society.

SIR:— I learn that the attempt to introduce Bees, by the "R. B. Forbes," has proved abortive.

That Bees can be introduced into the Islands, by taking advantage of their natural characteristics, I think not only possible but very probable, and shall, sir, with your permission, proceed to give that peculiarity, by taking advantage of which I think you will attain the desired result.

Bees *hybernate* in the winter. When the thermometer has fallen below a certain temperature (45 or 50 degrees,) they lie dormant and eat no honey. But when it rises above, they must consume sufficient food to raise the temperature of their bodies to about 70 degrees of Fahrenheit.

Some farmers observing this peculiarity take all the honey from the hives at the commencement of the cold season and place them where they will be continually below the first named temperature till spring opens and the Bees can again make honey.

Applying this to the case in hand, let a hive be placed in a water-

tight box, then packed in ice and thus conveyed to the Isles. As soon as the artificial winter has been removed, the Bees will awake to their accustomed industry and activity. The effect on them will be no more than of a long winter.

This seems to be the most feasible plan of procuring Bees from the United States, by way of Cape Horn. It seems to be the best way to obtain them from any country. Packed in ice they feel none of the changes, constant changes, which occur on shipboard. They fall asleep in America—they awake in Oahu—they are transplanted and that too, in entire unconsciousness. It may be a question whether they ever perceive the change.

Aside from its importance to the Islands, this object has great interest for the naturalist, and the Bee, from the moment she spreads her wings in the Hawaiian breeze, should be watched, her vagaries noted, that thus a new chapter may be added to our national science, and that the Islands so lately a blot on creation, may become a star, from whence shall radiate the light of knowledge, science and religion.

I am Sir, yours truly,

J. E. CHAMBERLAIN.

I have forwarded suitable replies to these several communications, and in consequence of the crowded and voluminous amount of reports about to be submitted to your notice, I shall best consult your interest by brevity, and therefore conclude, having alluded above to the most important matters in my department.

REPORT ON ANALYSIS OF SOILS.

BY W. H. PEASE.

The task imposed on your committee, would require, if properly executed, the assistance of material and apparatus not within their reach. Analysis of soil, from which the true, and generally speaking therefore, the most profitable mode of culture can be adduced, should be accurately minute; as several of the most valuable and important

constituents of the soil, being required by plants in small quantities only, are distributed accordingly. The state of combination, in which the elements of soil exist, should also be known. Whether they are in a state fit for assimilation, which depends in a great measure upon the stage of decomposition the rocks from which they are derived may have arrived at and conseqnently their state of solubility, for instance, of those which abound in our soil, as the whole class of silicates, oxides of iron, &c. In view of these considerations your committee forwarded to the United States specimens of our soils and rocks for examination and analysis, from which, they very much regret, no return has been received. As all the information of any practical value they have it in their power to furnish the society, must be based upon correct analysis, the few observations your committee herewith present, they wish to be considered, therefore, merely as a substitute for a more full report to be rendered hereafter.

The practical relation of science to agriculture, need not be advocated. Were proof required, the rapid advance made in England and on the continent, within a few years past, would furnish sufficient. After several centuries of cultivation, the capabilities of the soil in those countries are, to all appearance, being just developed. Its resources not only sustained but increased to such an extent as to do away with any fear of over-population. Several of the most highly-gifted scientific men of our day have devoted themselves to the investigation of agricultural science, and been rewarded with the most brilliant results, particularly in the branch of organic chemistry. The laboratory of Nature has thus been opened up and entered, her processes been followed out and imitated, the true mode and object of pursuit in all science. There is in fact no pursuit more closely connected with science, more dependant upon it for successful operation and progress than agriculture. There is no pursuit, therefore, which requires an acquaintance with so many different branches of science, or so many of the laws of nature to be understood; for every department in both the organic or inorganic kingdoms, must be consulted in explanation of the growth and development of plants, their successful treatment and culture. It is not asserted that every planter and farmer should be a scientific man; a certain amount of information on scientific subjects is however indispensable. He must know

something of the nature of the plant he cultivates, the treatment of his land in manuring, &c. Neither will it be asserted that scientific theory is infallible or should take the place of practice. They should on the contrary support and confirm each other. Agriculture is and must continue to be in a great measure an experimental science. We can never hope to reach that point, predicted by enthusiasts in the science, when all vegetable products are to be manufactured out of the simple elements without the assistance of Nature in their growth. What experimental science has accomplished in England and Europe can be realised here.

The general theory and practice of agriculture and the experiments made in support and illustration of them as published in numerous works and proceedings of Agricultural Societies at the north, serve as little or no guide to us. Science has done very little as yet to assist the tropical agriculturist. The greater part of the information to be obtained lays scattered through the transactions of the different agricultural societies of the English colonies and possessions in the East and West Indies. Your committee would respectfully and urgently recommend that measures be taken to obtain complete files of such volumes. They probably embody more information, useful to our members than all other agricultural works besides. For several reasons, however, it will be found limited. Science has not been consulted to any extent in the cultivation of tropical products. The want of scientific taste among the planters; the amount of land uncultivated; the natural fertility of the soil; the cheapness of labor, and the non-residence of scientific men at the south are a few of them.

The field as it lies open now is a most inviting one. Are not our fruits, for instance, as susceptible of improvement as those at the north. By a study of their habits, the selection of proper location, varying the mode of culture and also the soil cannot new and valuable varieties be obtained?

The same may be said of all our produce. The competition between slave and free labor consequent on the passage of the English Emancipation Act stimulated the planters of English colonies to attempt in many instances a reduction in the cost of the production of sugar by the introduction of a more perfect system of agriculture. The quality of their labor however failed. In our case the climate is not

warm or enervating; the native laborer is capable of learning any agricultural operation, under proper discipline. But, unfortunately, our natives hold entire control over their masters. The subject of labor, however, is set apart for the consideration of a separate committee. The observation of your committee has been confined to one island, that of Kauai, on which they submit the following remarks:

Kauai has the reputation of being the oldest member of the family group, of which, however, no very convincing proofs have been advanced. It is true, without dispute, that a longer time has elapsed since volcanic action has taken place, than on either of the islands; in proof of which the argument usually made use of in regard to its age may be adduced. We may also in addition remark as evidence, the great number of rivers which find their way to the sea. Upon the windward side averaging one per mile, on the leeward, one for every three miles. They are evenly distributed and several of considerable size. The inference to be drawn is, that the decomposition of the rocks must have progressed farther, and the quantity of soil formed greater, so as to cover more evenly the surface and prevent the water from escaping through the veins and caverns, as it must undoubtedly do on the other islands.

There appears to have been on Kauai but one centre of volcanic action, from which all the ridges of hills, with their enclosed valleys and rivers diverge regularly to the sea, with the exception of one or two low irregular spurs. If the accounts of the natives can be relied on, the larger rivers such as Hanalei, Makaweli and Hanapepe, have their source at the same spot, on the ridge called Waialiali at a wet place called the "black waters," from whence within a few feet of each other, they start on their way to the different sides of the Island.

The whole geological formation of the Island is basaltic. Near the sea in several places, the beach sand has become hardened and cemented by the action of the sea water, assisted perhaps by the heat of the underlying lava, so as to admit of being cut and quarried for building purposes, but not to any extent. In several places the basalt has taken a regular columnar structure, the chrystals as perfect as those of the far famed Giant's Causeway. In diameter about one foot. The terminal planes are even however, and perpendicular to the axis.

Their regularity in shape had attracted the notice of the natives, as our guide informed us they were the Kapa sticks of their old Gods.

The basalt is usually of light color, yielding readily to disintegration by the action of the atmosphere and moisture. Its constituent parts and their relative quantity we are unable as yet to furnish. With their chemical character you are no doubt acquainted. They contain more of the fertilizing elements of soil than any other class of rock. In fact it would appear as though they were the result of the boiling together, most of the other rock formations, the granitic, syenitic, limestone, sandstone, &c., containing greater or less proportions of all the alkaline salts, more particularly in the form of silicates and nitrates. Their agricultural capabilities depend in a great degree on the quantity of lime they hold.

In caves on different parts of the Island, on which there is an extent of overlying rock, the carbonate of lime is found encrusting the roof to the depth of one or two inches, associated with several varieties of zeolites. On breaking open the harder varieties of the basaltic rocks, it is also found lining the vesicular cavities, together with stilbite, apophyllite, and other varieties of the zeolite family; forming small geodes. From the rapid and luxuriant growth of tobacco, the presence of nitrates, more particularly that of potash, must be inferred. The oxide of Iron is everywhere abundant. It exists in the soil originally as a protoxide, soluble and of course injurious to all vegetable growth. It will be noticed, particularly on our plains, that the soil undergoes a change in color, soon after being turned up, becoming a brighter red, which is occasioned by the absorption of about 9 per cent. of oxygen from the atmosphere, which changes also its properties, being now an peroxide, and insoluble, and thus rendered innocuous. Thorough cultivation, pulverizing the soil well, will therefore obviate any injurious effects from the super-abundance of iron.

The silicates also, which are the source of the most fertile parts of our soil, must have the benefit of thorough cultivation and exposure to the atmosphere, before they become fit for assimilation by the plant. By such treatment they are disposed to combine with the carbonic acid of the atmosphere, forming carbonates, and are thus rendered soluble, with the exception of the silicate of alumina which remains unchanged. On Kauai, this salt is much more abundant than either of the others.

On those parts subject to drought, its value is very great. It not only has a tendency to absorb moisture from the atmosphere, but also appropriates every drop it gets hold of to the best advantage. In the case of occasional showers, it stores away a supply in the sub-soil, which cannot escape until the plant has need of it. During such seasons as the two last, its effects are very perceptible, for without its agency, little or no cane could have survived. On soils where it abounds to the injury of the plant, an application of lime will correct it, in the shape perhaps of beach sand, if most convenient, which is made up of comminuted shells and corals. It will not take proper effect under 3 or 4 years probably, after it is applied.

On the subject of manures no reliable advice can be given, until the deficiencies of the soil or excess of certain parts is known. It is evident however, that on exposed situations, animal or vegetable manure can render but little service. On coffee plantations for instance, where the trees have arrived at a size sufficient to protect and shade the soil, the application of suitable vegetable or animal manures may be advisable, but generally speaking, the fertilizing qualities of animal manure, which consists in its ammonia or nitrogen, will be dissipated by the strong heat of the sun, and the rapid decay of vegetable matter, prevents any part of vegetable manure uniting with the soil. The addition of vegetable matter to our soil, must be therefore very slow even where the ground is heavy.

This statement would hardly seem to agree with the occurrence of what appears to be deposits of vegetable matter on our plains here and there. But it is no doubt the case, that the growth of trees has been greater, covering over more of the Island formerly, than at present. The kukui groves of Huleia, were united at one time with the woods mauka. At Makaweli also, the growth of trees and underbrush extended very nearly to the sea. Now they are confined to the hills, a distance of three miles inland. They were destroyed by fire. The remains of large trees are now to be found charred. In the valleys they have been met with at the depth of six or eight feet below the present surface.

From the shade and shelter of trees, our planters and farmers might derive great assistance, in the growth of all our crops. They deserve more attention than they have heretofore received. Affecting the tem-

perature of the atmosphere in their neighborhood, they favor the deposit of moisture, as well as shelter plants from the drying winds.

On manures in general, your committee would remark, that it would appear as though the want of proper effect in their use, was compensated for in some measure, by the greater richness of the soil in tropical countries, possessing in their volcanic formations all the elements of fertility in abundance.

In conclusion your committee would express their conviction that experimental research, guided by science, is the true basis of improvement in agriculture. They would therefore respectfully recommend, that a standing committee on soils be appointed, whose duty it shall be to report to the Society, a plan of a series of experiments on all our crops and products, adapted to different soils and localities; after passing the consideration of the Society, to be given out to those members for trial, to whom they are now particularly suited. Should they involve any considerable expense, it should be borne by the Society. It should also be the further duty of said committee, to collect the result of such experiments, whether successful or not, and report them in detail to the Society, together with such other information as they consider of value.

All of which is respectfully submitted by your committee.

COMMUNICATION UPON THE SUBJECT OF CAUSING THE SUGAR CANE TO BEAR SEED.

To the Royal Hawaiian Agricultural Society:

GENTLEMEN,—I feel much honored by having my name enrolled amongst the earliest corresponding members of the Royal Hawaiian Agricultural Society; it is agreeable to me to take my stand in the dawn of knowledge, anywhere. You request from me a communication, if possible, touching tropical agriculture; a subject which—from having, nearly all my life, resided in northern countries—I have not much studied. There is, however, one point which appears to me of some importance, to which I wish to draw your attention; and for the

elucidation of which, your climate is, probably, better suited than any other.

It is the idea of causing the sugar cane to bear seed, that some endeavors may be made to raise better varieties than those now in cultivation.

The state of knowledge, on this subject, at the present time, is as follows:

There are only about from five to seven varieties now in cultivation, in all parts of the world. I will not enumerate them, because there are many doubts respecting their identity. The Tahiti cane seems to be one of the richest, and most productive in juice, but is not well adapted to every country.

Like almost every plant which undergoes the same process, and which, like the sugar cane, has two methods of propagation—seed and offsets—the constant propagation by the latter method has obliterated the faculty of seed. No variety can be originated by offsets, it must be by seed; and as there are varieties, there must once have been seed.

If the arrows of the sugar cane are examined with a lens, the seed will be found dried up, or abortive, incapable of vegetating. There may be two reasons for this—first, the want of pollen, to fructify the seed; and second, the want of the proper materials in the earth, to furnish the ingredients necessary either for the seed or the fruitful pollen.

An attempt has been made to supply the first deficiency, by using the pollen of the Guinea corn and the maize, under the idea that, all being grasses, the pollen of the latter might render the seed fruitful. The attempt, however, as might have been expected, failed; the Guinea corn and the maize being too widely separated in their natures, from the sugar cane, to produce this effect. The only chance of success would have been with the pollen of a grass called Erianthus, growing in New Holland and Oceanie; or another, Pleuroplilis, growing in Japan.

As neither of these can be obtained, the second method is the only chance of obtaining seed. I will therefore give my ideas as to how the experiment should be conducted:

A piece of sandy poor soil should be chosen, which should be manured with finely ground bone dust, in small quantity, about 1-20th of

that quantity of salt, and some wood ashes; this should be incorporated into the soil, and, after the plant has grown pretty strong, say about three or four feet high, a slight top dressing of the same (but less salt) should be stirred up into the soil; all the offsets, or suckers, excepting one, should be cut or pinched off. Guano which has been washed with cold water, say one pound left three hours in two quarts of water, the water poured off, the guano dried, and applied to about twenty-five plants, top dressing as before.

It is right to give the reasons on which this mode of proceeding is founded. Phosphate of lime, as well as other phosphates, are an indispensable ingredient both of grass seeds and pollen; this is to be supplied in excess by the bone dust or guano. Salt gradually dissolves the phosphates, so that they can enter into the plant. The wood ashes supply the potash, to dissolve the silica from the sand; as all young grasses require much silica. The reason for the poor soil and the wasted guano is, that it is not desirable to have, in this experiment, a large or luxuriant growth of leaf or stem, such as is produced by rich or ammoniacal manure. The object is to concentrate the juices containing the excess of ingredients of seed and pollen, and not distribute them through a large mass. If a single good seed is produced on a plant, at first, it is enough. Destroying the offsets, which should be removed as early as possible, needs no reason; it is obvious.

Now, the great point is, to produce one, two, or more seeds that will germinate and produce plants, no matter how small or poor these plants may turn out; the object is, to make the cane revert back to the power of producing seeds, which it will soon do if raised from seed. After this, any quantity of seed will be easily obtained, and success, in raising finer varieties, certain, by subsequent proceedings.

One more remark is requisite: disappointment must not be felt, if seeds be not produced the first year, or even the second; in all these experiments patience is required. The double flowers, which were originally obtained from wild single ones, have taken many years of patient perseverance.

The importance of obtaining seed is manifest, from the facts that seedling plants, or varieties, are very frequently better adapted to the climate in which they are raised than any other; and that many years having elapsed since any new varieties of cane have been rai-

sed, the probability is great, that, with the progress now made in agriculture, much better varieties may be obtained than those now cultivated.

With respect, I remain, Your obedient servant,

JAMES E. TESCHEMAKER.

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THE

TRANSACTIONS

OF THE

ROYAL HAWAIIAN

AGRICULTURAL SOCIETY:

AT ITS THIRD

ANNUAL MEETING IN JUNE, 1853.

VOL. 1, NO. 4.

HONOLULU, H. I.
PRINTED FOR THE SOCIETY.
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1853.

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PROCEEDINGS

OF THE

ROYAL AGRICULTURAL SOCIETY,

THIRD ANNUAL MEETING,

HONOLULU, JUNE 7, 1853.

THE SOCIETY met according to adjournment at the Court House, in Honolulu, at half-past 10 o'clock, A. M., his Honor, WM. L. LEE, President of the Society, in the Chair.

The business of the meeting commenced by the President reading his Annual Report, in compliance with the 9th Article of the Constitution, which was as follows:

Gentlemen of the Royal Hawaiian Agricultural Society:

The past year has been one of comparative prosperity, and the agricultural interests of the Islands are fast recovering from the sad reverses of 1851. Still the efforts of the agriculturist in some departments, especially in that of planting, is an uncertain business, owing to the want of the necessary capital, labor and knowledge, for its successful prosecution. In the present report I propose to state the efforts made by the Society collectively, together with those of some of its members individually, to promote the great object we have in view, and perhaps add a few suggestions in relation to the future.

SUGAR.—As is well known, one of our staple products, second to none in extent and importance, is sugar. The planters in this field are moving on slowly but steadily, and gradually improving their implements, machinery and modes of cultivation. The most serious drawback in this branch of agriculture is the heavy duty imposed upon our sugar and molasses in the United States, and the Society has not failed to use all the means in its power to procure its abolition. But our efforts, though promptly seconded by the Hawaiian Government and the American Commissioner at these Islands, have as yet resulted

in no success. San Francisco is our great market, and there we are subjected to a duty of nearly two cents per pound on our sugar, and about five cents per gallon on molasses. Let this onerous duty be removed, and the success of our sugar planters, and the consequent prosperity of the Islands will be secured.

The endeavor to cause cane to bear seed, as recommended in the valuable letter of Mr. Teschemaker, has thus far been a failure, and no effort has been made by the Society to introduce new varieties of the sugar cane from Tahiti and other countries, as it is generally thought by our oldest planters that the several kinds of native cane now in cultivation are the best adapted to our soil and climate. The Tahitian cane introduced by Messrs. Ladd & Co. about ten years since, has nearly if not entirely disappeared, and there are contradictory opinions as to its value. I think, however, that it should have a fair trial, and that the Society could not make a better expenditure of a few dollars than by re-introducing it.

There is a rapid increase in the consumption of sugar throughout the world, and as the growth of this article does not keep pace with the consumption, the prospect is that prices will rather advance than decline. The whole produce of the Islands during the last year we estimate at about 700 tons, which, with the syrup and molasses manufactured, may be valued at $100,000. The crop for the year to come promises to be twice as large, and this is but a small fraction of what it should be. We have thousands of acres of first-rate cane lands now vacant and idle, which, with capital, enterprise and labor, are capable of producing enough to pay for all the goods we import. At present there is a lack of confidence in the business of sugar growing, arising from the reverses of 1850 and 1851. There is a lack of means in the country to set the ball fairly in motion, but the time will come, must come, when this business shall receive an impulse which will whiten our waste lands with the plumes of the sugar cane.

Our planters are to be congratulated on the return of Mr. Weston to the Islands, a man eminently qualified to improve our machinery and secure us against those vexatious break-downs of mills, &c.

Coffee.—The raising of coffee in favorable locations, for instance in the Valley of Hanalei, on Kauai, and the districts of Kona and

Hilo, on Hawaii, is undoubtedly a profitable business, and evidently destined to advance. The Society has taken no measures to introduce new seed from other coffee growing countries; for it is generally admitted by the best judges, that the Kona coffee of Hawaii, is not surpassed by any in the world. However, there is little doubt that the cultivation of coffee might be improved by more knowledge, and consequently the Society has sent for the most approved treatises on its culture, which are expected to arrive in a few months.

WHEAT, CORN, OATS.—A strong impulse has been given to the raising of grains since our last meeting, by the high price of flour and other bread-stuffs, and the farmers of East Maui have apparently gone to work in earnest, with the determination to raise sufficient wheat to supply our home consumption, which is no small item in our bill of expenses. Heretofore the raising of wheat has been considered as a very doubtful experiment, and has been prosecuted by only two or three individuals on a very small scale. The able Report of the Chairman of the Committee on Grains, read at our last meeting, demonstrates the adaptation of our soil to the raising of wheat, especially on East Maui, and I see no reason why we should not grow our own bread. All the seed that could be spared from Mr. Green's crop of last year has been sown by himself, Mr. Croswell and others, and gives promise of a fair harvest. There is an enterprise under way, having for its object the erection of a good Flour Mill on the Wailuku river, sufficiently large to manufacture more flour than we can consume, and it is hoped it will meet with success. The raising of our own bread is an object of the greatest importance, and one that demands our earnest attention. No doubt there is much to be gained by occasionally changing our seeds of wheat, corn, &c., for the better kinds of other countries, and the Society, following the suggestions of the Committee on Grains, has taken measures to introduce the choicest qualities of seed wheat, oats, barley and Indian corn from England and the United States. A box of these grains and other valuable seeds, for which we are indebted to the kindness of B. P. Johnson, Esq., Corresponding Secretary of the New York State Agricultural Society, is now on its way to the Islands in the "Matanzas."

The raising of Indian corn has increased during the past year, and and what has been produced has found a ready market in Honolulu at from 3 to 5 cents per pound. Our corn crop, however, is a very uncertain one, the success or failure of which depends in a great degree on the seasons and time of planting. The study of the weather is almost as important to the farmer of these Islands as to the mariner. On Oahu the season for planting is from November to March, while on Kauai, only 70 miles distant, where corn has been planted almost for the first time this year, it is found that that planted in the winter months has come to nothing. On the contrary, that planted by Lieut. Reynolds in September last, gave a fair yield.

Barley and oats have as yet received very little attention, though considerable quantities are imported for horse feed. Oats and barley, I am told, do admirably on East Maui.

Potatoes.—Last year at this time our hopes of realizing much from this crop, formerly one of our greatest exports to California, were very low, as we were informed on all hands, that hereafter California would produce her own vegetables. The result was that few if any were planted, and the busy little villages of Kalepolepo and Kahului, the principal potato ports, suddenly became deserted. But within the last few months, the trade has revived, and is now steady and profitable, the demand exceeding the produce. Little or no trouble has been taken in cultivating this crop, and most of our potatoes are the spontaneous production of the uplands of East Maui and Hawaii. The dry mellow loam of the Kula and Kahola uplands is admirably adapted to the growth of this vegetable, and with any cultivation could be made to produce very superior potatoes. Mr. Torbert, who is extensively engaged in the raising of this crop has exhibited some beautiful specimens grown in Kula, and he is doing much to encourage the general cultivation of a better article. The red potato is considered the most profitable for exportation, while the orange white, I am told, is generally preferred for home consumption and the use of the whaling fleet. Some fine seed from Oregon, Vancouver's Island and Australia has been procured and distributed, but I have not yet learned the result. Potatoes have been planted to some extent on the high lands of Oahu and Kauai, but have generally

produced litttle more than tops. The potato disease, which has proved such a scourge in Europe and the United States, has not, so far as I can learn, yet made its appearance in the Pacific.

There is an increasing attention paid to the culture of the sweet potato, to which our soil and climate are admirably adapted. It grows well in almost every part of the Islands, and no where better than among the dry hot stones of Puna, Kau and Kona on Hawaii.— No one who has ever traveled over those districts can fail to have been struck with astonishment at the sight of beautiful sweet potatoes growing in hills of broken lava with not a particle of earth to be seen in their vicinity. The natives sometimes manure these hills of lava by placing a few boughs upon the lava, then piling stones on them, and when they are partially decayed pulling up the stems or woody part which leaves the leaves and bark to moisten and enrich the hill. The sweet potato is the great article of food in the dry burnt districts of Hawaii, and the cost of raising it is next to nothing. The yield, I am told, is from 50 to 75 bbls. per acre. The sweet potato of the Islands, however, is generally considered a very inferior article to that of Burmuda and the Carolinas, and I think we might do some good by importing seed of new varieties, for example, the Burmuda Reds and the Round long Yams of the Southern United States.

Fruit Trees.—The culture of fruit, after being so sadly neglected for years, is now commanding a lively attention, and nearly every person in and about Honolulu has gone to work in planting trees with an energy that promises well for the future. I am sorry to say that our apple, plum, pear, quince, cherry and other fruit trees introduced last year, and for which we hoped so much, have yielded us nothing but disappointment. They were planted by several ladies and gentlemen who are very enthusiastic in the culture of fruit, and though every pains was taken to make them thrive, yet it was in vain, and what have not died, are now lingering out a miserable existence, sickly, leafless and covered with scale insects. It is the general opinion that these trees would thrive in the cool climate and rich loamy soil of Kula on Maui, and the mountain districts of Kohala, Hamakua and Kona on Hawaii, but if so, I think they should be raised from the seed. We ought not to be disappointed when trees

brought from foreign lands, grown in a soil and climate totally different from our own, sicken and die.

But though we cannot raise apples, plums, pears, cherries, etc., yet we can produce figs, grapes, bananas, oranges and most other tropical fruits in abundance; and I may add the peach also, as any one may see who will visit the garden of Mr. Parker in Hamakua or Mr. Green's at Makawao. The former has 40 or 50 trees, larger and more luxuriant than any I ever saw in "Old Jersey," the growth of five or six years, from stones planted by his own hands. I consider it one of the cardinal and particular duties of every man in this climate to plant trees. Plant them for shade—plant them for ornament—plant them for fruit and profit—plant them as a monument which shall ever keep your memory in green remembrance, and transmit it with gratitude to generations unborn. Let those who wish to be convinced of the value of trees look back a few years upon the burned and barren yards of Honolulu, and compare them with the cool and beautiful groves of our forest city.

Mr. Montgomery, our Corresponding Secretary, has introduced within the past year over 50 new varieties of the vine from Australia, some of which are said to promise well, and it is hoped that he will eventually be able to furnish cuttings for vineyards on every island. The Osage orange has also been introduced by Messrs. Mitchell and Whitney with the view of furnishing us with a cheap and durable fence, but the plants, with very few exceptions, though grown from the seed, have become sick and feeble.

Tobacco.—The cultivation of this plant has not progressed sufficiently far to determine whether its production on a large scale will prove profitable or not; but I know of no reason for discouragment. Guano is used as a manure for this crop with great advantage in Cuba and the United States, and is said not only to produce a more rapid and vigorous growth, but a larger and finer leaf. It is well worth a trial here, and I take pleasure in laying before the Society a communication on the subject of using guano as a manure, from Thomas R. Eldridge, Esq., the King's Charge d'Affaires at Lima, addressed to the Minister of Foreign Relations. The Society have been at some trouble to import a lot of the best Havana seed from

Cuba, and also a few papers from the land of steady habits, good old Connecticut, where it is grown in large quantities.

NEAT CATTLE.—The raising of cattle, especially when connected with the dairy business, is one of the most profitable pursuits that can be followed in the Sandwich Islands. They require no feeding, no salting, no sheltering, and the cost of raising them is very trifling, above the rent for pasture. They are worth $5 per head on Oahu, all ages counted, and on the other islands only about half as much, owing to the difficulty of transportation to market. There have been no new breeds imported this year, that I am aware of, though nearly all of our graziers are improving their cattle by crossing with the previous importations from Australia. Much credit is due to Mr. Hopkins, Mr. Moffat, Capt. Meek and others, for their efforts to improve our stock, and I am glad to learn they are being rewarded for their labors in this line by ample profits. It is generally admitted, I believe, that the best breeds yet introduced are those of Messs. Hopkins & Moffat, the Hereford and Angus. The Society authorized me to take measures for the importation of a good bull from the United States, and I have corresponded with some of the best agriculturists in that country on the subject. They generally recommend the Devon stock as the best, all things considered, for beef, working oxen and milk. In a letter recently received from B. P. Johnson, Esq., Corresponding Secretary of the New York State Agricultural Society, who is high authority on cattle, he says—"I can probably procure such Devon stock as I could recommend at from $50 to $150, delivered at Boston, i. e., a bull calf six or eight months old, and an in calf heifer two years old. This breed I think you will find well adapted to your islands, and they will prove very useful animals.—The cows are not large milkers, but give rich milk, that makes a large amount of butter in proportion to the quantity of milk. The steers make fine beef, and for working cattle no other breed equals them. They are easily kept, hardy, and will stand your climate well." The great expense of importing stock from the United States is a serious objection to carrying out the wishes of the Society, and probably the Devon, and also the Durham breed, to which I have always been partial, might be imported from Australia at much less cost

Some of our cattle growers are awaking to the importance of bestowing more attention to Dairy Husbandry, and we may indulge the hope of being able in a few years to export a considerable quantity of butter and cheese to California and elsewhere. I had the pleasure a few months since of spending two days with Mr. Parker on Hawaii, who has one of the finest herds of cows in the group, and finer looking animals I have rarely seen. But I was surprised at the small amount of milk they gave, and the trouble of procuring that little.—The cows were first made fast head and hind legs, then the calf was brought out—and after a great deal of pulling and bunting the milker managed to get from three to six quarts of milk from each cow.—From a herd of 140 cows Mr. Parker obtains only 90 lbs. per week, or an average of 15 2-7 lbs. annually for each cow, while in England and the United States the average produce is as high as 100 lbs.—However, the dairy business is profitable; for Mr. Parker informed me that he obtained 50 cts., per pound for all of his butter, which would give him $2,340 per year, to say nothing of the swine he feeds on his spare milk.

SHEEP.—It is the general opinion that the raising of sheep is a very profitable business, though they have heretofore been grown merely for their mutton, without the least regard to the value of their wool.—Their increase is very rapid, the ewes having lambs at the age of 12 months, and twice a year. Several persons have engaged in the business on Hawaii and Oahu with energy, and some of them have from 1000 to 3000 sheep. Our breeds however, which were originally the Saxon and Merino, imported I believe, by the late William French, Esq. have become sadly deteriorated by in-and-in breeding, and I am happy to have it in my power to state that steps have been taken to regenerate our breed by an importation of fresh stock. Messrs. Hopkins and Moffat have imported some fine Merinos from Australia, and Mr. Thomas Cummins has on the way to the Islands in the "Matanzas," two fine ewes with lamb, and two fine rams of the pure South Down breed, which raise good wool, and are unequalled for their mutton. These sheep are from the celebrated flock of Mr. Mc Intyre, of Albany, N. Y., and the ewes are in lamb to a ram bred by L. G. Morris, Esq., President of the N. Y. State Agricultural Society,

from stock imported from England. A sample of wool from Mr. Cummins' flock was sent to Boston last year for examination, and handed to George W. Bond, Esq., one of our corresponding members, of much experience in the wool business, who reports that such wool in fleeces, washed on the sheep's back, is worth in Boston market 50 cents per pound.

The greatest drawback that we have to encounter in raising sheep, is the loss arising from packs of worthless, half famished curs, that are constantly prowling like so many hordes of wolves in the woods bordering on our best sheep districts, and also from what Mr. Kenway styles, that "more insignificant pack of native pets," that infest every neighborhood of grass houses. The most effectual way of protecting our flocks, I think, is to import some good dogs, and I would suggest the propriety of offering a handsome premium at our next exhibition for the best shepherd's dog. Already we have a countless multitude of dogs, but they are a snarling, cowardly, sheep-stealing pack—a "cross of everything under the sun, having any affinity to the canine race" and fit only to eat strychnine.

Swine.—The Society since our last meeting has imported two boars and two sows, a cross of the Suffolk and Mackay breeds, esteemed as one of the best of the U. S., and which has taken frequent prizes in New England. These hogs have been placed in the keeping of Capt. John Meek, who has several other English and American breeds of excellent reputation. His swine are very superior, and such as I feel confident would take a premium in any country. Besides these, we have the pure Chinese breed, bred exclusively by the King and Paki, and a new English breed imported since our last meeting by Mr. Janion. The demand for live hogs for exportation to California exceeds the production, and hardly a vessel leaves for San Francisco, that does not carry a deck load of grunters. They are worth 4 to 6 cents per pound on foot, and the business of raising them is within the scope of the natives, and pays well. I see no good reason why every sugar establishment in the Islands, should not fatten a 100 or more of hogs every year from the skimmings, etc., of the boiling house.

The pigs imported by the Society, were a present from Henry A. Pierce, Esq., of Boston, and the freight, etc., were given by Messrs.

Pierce & Brewer, two gentlemen who seem ever ready to advance the agricultural interests of the Islands.

Horses.—Within the last year there has been imported from Sydney, a thorough bred stallion and mare, by Mr. Janion, and from California, an American mare by Mr. Cartwright.

A lively interest has been awakened in the raising of good horses, and our breeds are rapidly improving. The raising of poor horses is a poor business, while that of raising good horses is a good business. To show the value of good horses, I would remark that several colts got by Capt. Meek's Oregon, out of Mr. Cummins' Jenny, have sold for $300 each, and one of these was only a yearling. There are also several fine colts sired by Mr. Thompson's "Admiral," which when grown, will undoubtedly command good prices.

The Society, anxious to carry out the suggestion of the committee on horses, made at our last meeting, instructed me to take the necessary steps for importing a Canadian stallion of the best breed from the United States. Accordingly I wrote to B. P. Johnson, Esq., for information on this subject, and have recently received a reply, in which he says: "The Canadian horse is a very hardy animal, that would do good service in your islands. They are rather under size, very compact, of great powers of endurance, and very easily kept in condition. They are not fancy horses like some of the English breeds—but they are made for service peculiarly, and in that respect are not often excelled. I could probably procure them with a little trouble, that might answer your purposes, at prices for an entire horse of from $150 to $300—though if *great speed* was desired, the price would be much higher—as in this day of progress, a horse that can make his mile in 2.26 or 3 *minutes*, generally commands what is asked; still, of commendable speed and good action I think I could obtain a good horse within the range I have named. For a filley or mare from $75 to $150, according to age and quality. The delivery at Boston would add from $10 to $15 each on these prices."

The freight, food, water, etc. of a horse from Boston to Honolulu, would be at least $200, and besides this, there would be great risk of losing the animal in so long a voyage round Cape Horn. This risk I should consider so great as to render it unwise for the Society to make the attempt, but in this I may be mistaken.

The best mode of breaking horses I consider an important matter, and one which I trust will not be overlooked by our able committee.—I mean breaking them to harness. Instead of handling our colts young and treating them kindly, they are generally left to run wild, until they are two, three, or four years old, then lassoed—mounted by a kanaka wilder than the colt, spurred and run without mercy, and in nine cases out of ten either spoiled or broken down. We need horses for carriages, horses for ploughs, horses for all kinds of agricultural operations, and yet we have hardly one in the Islands than can be trusted at all times and in all places, unless bred and broken in another country.

Mules.—This is a very valuable animal, and is principally used by the natives as a beast of burden to bring their poi and other produce to market. Now and then we see a fine mule 10 or 12 hands high, but generally they are small and inferior. I have taken some pains to ascertain the cost of procuring a good Jack from the United States, and think one could be landed here for about $500. The best breed of mules is raised in Kentucky, where the Jacks are sometimes sixteen and a half hands high, and command a ready sale, if very superior, at prices ranging from $500 to $3000.

Poultry.—We have the Shanghae and several other good breeds, which, when crossed with the native hen, makes a fine hardy fowl.—The pure Shanghae is too delicate to be raised with profit. Mr. H. M. Whitney has taken a good deal of interest in poultry this last year, and now has on the way to the Islands in the "Matanzas" two pairs of black Spanish fowls, which cost in Boston $20 each, and he has also sent for a pair of white dorkings. The raising of chickens and eggs is a very easy and profitable business in theory, but in practice it is a very troublesome and uncertain one, arising from the great tendency of the chickens to die from the eye disease and other afflictions.

Honey Bees.—Mr. Henry A. Pierce, of Boston, one of the committee on the honey bee, and who is so indefatigable in his efforts to furnish us with this very interesting and valuable little insect, has recently shipped us two hives per the "Matanzas," one in the usual

way, and one packed in ice, at a large expense. The activity and generosity of Mr. Pierce is worthy of all commendation.

PREMIUMS.—The Society has expended about $1000 during the last year for prizes awarded at our our last exhibition, and nearly $500 for premiums for the ensuing exhibition, which latter have not yet been received. Agreeably with the instructions of the Society, I addressed a letter to the Corresponding Secretary of the New York State Agricultural Society, on the subject of premiums generally, and enquiring particularly what it would cost for a fine engraved steel plate diploma. His reply is as follows:

"I enclose you several of our premium lists, from which you will see that we give mainly *money premiums*, leaving it to the choice of the recipients to take *plate* if desired. We also give medals, diplomas, and useful agricultural works, believing that the books we give will prove useful to the farmers—and of this there can be no doubt. My own impression is, that so far as the benefit of the farmer is concerned, *plate and books* are most useful. The plate is a memento of merit *before the family* always, and stimulates to renewed efforts, and aids in training the sons and daughters to emulate in their turn. Still, we find that *men* generally prefer the *money—ladies*, the plate, medals, &c.

"DIPLOMAS.—I send you two which we use, No. 1, is a steel plate we had engraved at a cost of about $250. From this it costs to strike our diplomas, including paper, about 12 1-2 cents each. No. 2 is a lithograph. The original cost of this was about $35 or $40. The impressions from this can be made for about the same price 12 1-2 cents each. I could procure a plate (having the design furnished) for $35, and could have impressions, (if from 1000 to 2000 should be taken) done at from 8 to 10 cents each."

For the financial condition of the Society I must refer you to the Report of the Treasurer, which gives a detailed account of all our receipts and expenditures. The Society has this year added $500 to its permanent investment, making in all the sum of $1,500, secured by mortgages on real estate.

Respectfully submitted,

W. L. LEE, President.

R. G. DAVIS Esq., Treasurer of the Society, next presented his Annual Report, which was accepted. A vote of thanks was passed to the President, for his valuable report, and also to the Treasurer, for the satisfactory manner in which he had discharged his duties, and for the report of the financial affairs of the Society now submitted.—The following is his report:—

To the President and Members of the R. H. Agricultural Society:—

GENTLEMEN:—It will be seen by the accompanying account that we have 124 annual members, an excess of only four over last year. I had hoped at the commencement of the year to have added fifteen or perhaps twenty more to the above number; as I confidently anticipated to retain most of the old members, so that those uniting with us would be an actual increase of our number. I regret to state, however, that many of the old members have declined renewing the subscriptions; so that although we have 42 new subscribers, our list, instead of being considerably increased, continues nearly the same.—It is not easy for me to assign any particular reason for the want of interest in the objects of our association, on the part of some of our former members; as in my opinion, there are few objects among the numerous ones that call for aid in our community, more worthy of a cordial support than a society for the promotion of interests so inseparable from the prosperity of the Islands.

The receipts are $133 44 more than they were last year, although the amount received for interest on Loans is $58 48 less; and as the number of subscriptions is nearly the same, this increase is almost wholly in consequence of the liberal donations of articles sold at auction at the close of the last fair.

No life members have been added during the last year; in fact, there have been no additions to the list since the first year of our organization.

No special amounts have been paid by the Treasurer for premiums, except the sum of $482 38 to James Makee, Esq., by order of the Board; the amount paid for premiums ordered last year having exceeded the sum originally appropriated that much. It was not anticipated by the Board of Managers that the premiums would cost so

large a sum; consequently, this has been an unexpected draw upon the funds of the present year. The premiums have been in my charge since they were received from the United States.

In accordance with the act of June 18th, 1851, I made the required exhibit to His Highness, the Minister of the Interior, in January last, when the amount raised by voluntary subscriptions having reached $500, a like sum was promptly paid from the Government Treasury. On the 6th of April, I loaned on good landed security the sum of $500 for two years. The amount of funded property now belonging to the Society is $1,500,—all drawing the regular rate of interest.

For further information in regard to the receipts and disbursements, I would respectfully refer you to the accompanying account.

RECEIPTS.

Cash from C. R. Bishop, balance of last year,	$101 69
Donations of articles exhibited June 2d, and sold at auction,	161 89
Cash received from the Hawaiian Treasury,	500 00
Amount of duties on books, medals, &c., remitted by the Commissioners of Customs,	36 13
Cash received for interest on 2d loan of $500,	60 00
" " from 124 annual members,	620 00
	$1,479 61

DISBURSEMNTS.

Certificate of annual membership to F. W. Thompson and T. H. Marshall,	$10 00	
Paid for lighting chapel for address,	5 00	
Paid for printing No. 3 of "Transactions,"	306 44	
Paid J. Montgomery balance due on invoice of books from London	8 00	
Paid James Makee, Esq., balance due on books, medals, &c.,	482 38	
Loaned for 2 years on note and mortgage,	500 00	
Paid for Recording mortgage,	3 00	—1,314 82
		$164 79

Yours very truly,
ROBERT G. DAVIS, Treasurer.

The following reports were read in order and accepted:—

Of the Vice President of Kauai, from J. F. B. Marshall.

Of the Committee on Poultry, by E. Whittlesey.

Of the Committee on Sugar, from J. F. B. Marshall.

Of the Committee on Horticulture, by J. Montgomery.

Of the Committee on Coffee, by G. Rhodes.

Of the Committee on Agricultural Implements, by R. Armstrong.

Of the Committee on Horses, by G. P. Judd.

Of the Committee on Swine, by R. J. Hollingsworth.

Of the Committee on Fences, from E. Bailey and R. J. Hollingsworth.

Of the Committee on Sheep, by C. G. Hopkins. Letters were read, also, in regard to the sheep now on the way to the Islands for Mr. Cummins, on board the "Matanzas," showing their pure blood, and also their value for mutton and wool.

Of the Committee on procuring seed from the Sugar Cane, from E. P. Bond, and from B. Pitman, members of the Committee.

Of the Committee on Birds, by L. Severance.

A Committee of three was appointed to nominate Committees on Premiums at the Fair. Messrs. Torbert, W. H. Rice and S. N. Castle were appointed by the President.

A Committee of three was appointed by the President, to receive and examine Essays presented on the subject of Agriculture in the native language. Messrs. Ii, Hall and W. H. Rice were appointed.

On motion, it was Resolved, That any native, on the payment of one dollar, be allowed to exhibit articles at the Fair, and be as eligible for a premium for the best production, as if a member of the Society.

Resolved, That the members of all auxiliary Societies, which pay their funds into the Treasury of this Society, be allowed to exhibit and compete for premiums at the Annual Fair, on the same footing as members of the Parent Society.

The Committee to nominate Committees on Premiums, reported; their report was adopted, and is as follows:

G. M. Weston, B. F. Snow, G. M. Robertson	On Agricultural Productions.
T. Cleghorn, A. B. Bates, E. G. Beckwith,	On Horticultural & Floricultural Productions.
J. H. Wood, T. Metcalf, H. Rhodes,	On Manufactures.
B. Pitman, S. Reynolds, J. Dudoit,	On Stock.

Adjourned to half-past 7 o'clock, P. M., at the Chapel, to hear the Annual Address, by J. Montgomery, Esq.

The Society met at the Chapel at the hour specified. The President took the chair and called the Society to order. A large audience of ladies and gentlemen were present, to whom the President introduced Mr. Montgomery, as the orator of the evening. The following is his address:

ANNUAL ADDRESS.

The task which has devolved on me, of addressing the members of the "Royal Hawaiian Agricultural Society," on this, the 3d Anniversary of our assembling together, would be attended with considerable embarrassment, under any circumstances, and is rendered still more arduous by the necessity which is imposed on me, of following our excellent President, and the two other distinguished gentlemen, who have in the three preceding years of the existence of the Society, so ably discharged that duty; and when I review their addresses and see how very comprehensive they are, and how various the topics which they have discussed, I am forcibly impressed with the conviction that the field of operations which is left open to me, is comparatively limited and circumscribed in its extent. I shall therefore be compelled to solicit some indulgence if, in the course of the remarks I propose to submit to your consideration, I shall feel myself unavoidably compelled to refer to, and perhaps dilate and enlarge upon some of the subjects which have already been touched upon by those who have gone before me.

I have also felt some additional embarrassment in undertaking this duty, because, although tolerably familiar with the science and practice of agriculture, and its lovely and fascinating sister, horticulture, at whose shrine I have ever been an ardent and impassioned votary, I am compelled to confess that all my experience in both these pursuits has been acquired in more northern latitudes, where winter in a rigid form, contributes its valuable aid to the labor of the cultivator, and that I am in comparative ignorance of both the science and practice, as applicable to a tropical region. But feeling as I do, that in a community, so circumscribed in numbers and extent, and so comparatively in infancy in knowledge of agriculture, as this, the land of our adoption, and probably the permanent home of the majority of us,

it is the bounden duty of every individual to contribute to the utmost extent of his abilities and of the information he may possess, to the promotion of the common cause of increasing our national prosperity, by bringing to light the varied resources which bountiful nature has, with no niggard hand, placed within reach, I have consented to discharge a share of that duty, by laying before you such ideas and suggestions as present themselves to my mind, and in its execution I must trust to your indulgence to make all allowance for its inadequacy.

The great and paramount importance of agriculture, as the primary source of all wealth, and the basis of national prosperity is so universally recognized and admitted by all civilized and enlightened nations, that it is unnecessary for me to expatiate upon it. As has been eloquently and truthfully said, by our President, in his excellent address at the inauguration of our Society, "The culture of the soil lies at the bottom of all culture, moral, mental and physical," and it is a truth familiar to us all, that where the treasures of the soil lie neglected and unexplored, there we find the "Savage, whose untutored mind," is as barren and neglected as the forest through which he ranges.—On the other hand do we not find, that in the countries where civilization and refinement have most progressed, agriculture is fostered and cherished as the most agreeable pastime, as well as the most direct and certain means of national advancement and prosperity, on which the welfare of the commercial, monetary, manufacturing and all other important interests mainly depend. Is it not the honest and honorable boast of Great Britain, that however vast is her commerce, ramifying and diffusing its treasures over all civilized and some semi-barbarous lands, and however marvellous and gigantic her manufactures, of which specimens are to be found in every part of the globe, her agriculture is the great foundation, the firm and unflinching support of all her other varied resources; the fulcrum on which they all rest; and sad experience has of late years proved that a serious failure, in even one comparatively unimportant crop, in a portion of that Kingdom, (endeared to me as the land of my birth, and the home of my youth,) produced a shock by which all other interests were for a time partially paralyzed, and which was seriously felt abroad, in the disturbance of the exchanges of other nations.

Again, what has elevated the United States to their exalted position in the scale of nations, attained with a rapidity and steadiness of progress, wholly unparalleled in history, but her agricultural enterprise, carried out by the indomitable energy and perseverance of her sons. It would be an easy task to multiply illustrations, but I aprehend the propositions I have laid down, cannot be controverted.

Is it not then of the most vital importance to us, and is it possible to exaggerate, by any force of language the necessity we are under, isolated, as we are, and suffering as we do, from want of capital, to use all our energies to explore and bring to light the vast amount of wealth, which lies hidden in the rich soil which abounds in many parts of these Islands?

But there are other aspects, besides a pecuniary and fiscal one, in which the culture of the soil presents itself in an attractive form.— From the earliest records of all countries, some of the best and greatest of men have been ardent and zealous cultivators of the soil. In England, practical agriculture has ever been the favorite occupation of the best and worthiest of her aristocracy, and her present Majesty and her Consort are among the most zealous and successful farmers in Great Britain. The immortal patriot who led his countrymen, in achieving the independence of the United States, was as conspicuous and stands out, in almost as bold relief in history, in the capacity of a practical farmer as of a citizen soldier. If we take a review of the mercantile, mannfacturing and professional communities of all countries, to what Goal do we find their Merchant Princes and Millionaires, all striving? Do we not invariably find them retiring to the tangibility of a country residence, and closing their career in the active cultivation of those acres, in the purchase of which they have invested the earnings of their years of toil, and settling down on the peaceful and invigorating enjoyment of rural pursuits, as the final end, and ultimate recompense of their anxious days of successful speculation and adventure?

It is, I think, much to be regretted that more attention has not been paid, and more encouragement given to the cultivation of the many and various valuable and important crops which I trust, through the instrumentality and assistance of our Society, will, ere long, be produced on our hitherto waste lands. When we reflect that in this

group we can command every climate ranging from that in which the "Bee banquets as in a whole year of flowers" to the eternal snow of Mauna Loa, it does seem strange that so few of the many products which might be profitably produced in so extensive a range of climate have been cultivated amongst us. The great value and importance of the culture of the soil, were, as I learn, known to, and appreciated by the great Kamehameha Ist, the Alfred of this Kindom, who devoted much attention and afforded much encouragement to the natives of his day to cultivate such crops as his limited amount of information enabled him to recommend by precept and example. He rewarded the industrious and punished the indolent, and the fish ponds and other still extant traces of his laudable exertions, attest the value of his enterprize and energy. It is not for me to say why those into whose hands have since fallen the control and government of the country, have not appreciated the importance of the example set them, and it was not without regret that I have listened to eulogies pronounced in our Society, on some whose claims bear no comparison to his as encouragers and promoters of agriculture, whilst his higher merits have been entirely overlooked.

In later days, so far as I can ascertain, the culture of the soil of these islands has been little attended to or encouraged, and if I am rightly informed, impediments have actually been thrown in the way of those who have sought to turn the land to good account, whilst on the other hand, large importations of merchandize have been made, without any attempt to produce, from the only available source, the necessary articles of export wherewith to pay for the goods imported, and the natural and inevitable result has followed, in the heavy and oppressive balance of trade against us, which, till more sagacious measures shall be adopted, must go on crippling our means and increasing the inanition under which the National Exchequer has so long suffered.

With the laudable purpose and earnest desire to mitigate, and eventually entirely to remedy this glaring evil, by assisting and encouraging those who have the will united with the means of embarking in the culture of the soil, and thereby to bring into life and activity these many and various means of wealth which had hitherto lain neglected and undeveloped, and from which alone we could hope

to rectify the vitiated condition of the body politic, the Society I have now the honor and gratification of addressing, was, by a few intelligent and enterprising individuals, who saw and felt the bane as well as the antidote, called into existence in 1850, and considering that as yet, it is little else than an experiment on a large scale, I think I may fairly assume that its labors have not been without valuable and important results.

Another laudable purpose which our infant Society had in view, was to diffuse and spread information on the subject of the culture of the soil and its profitable occupation, in all their various phases amongst settlers who reside in remote districts, and so isolated as to be entirely beyond the reach of personal intercourse. To the inexperienced it proposed to point out the unexplored mines of wealth lying hidden in the soil, and to induce them to embark in their culture and development, as the high road at once to individual wealth and national prosperity. It was anticipated too, that if the foreign settler could be persuaded to adopt the means within his reach to raise new products and increase the amount and improve the quality of those already in cultivation, his success would, in course of time, operate as an inducement to the natives, who, with their natural shrewdness would be certain to watch and appreciate the good results of the "Haole's" exertions, and in all probability follow his example, and thereby add his mite to the national capital.

Moreover, it was anticipated, that if the native could be induced to devote himself to the profitable culture of the soil, it might probably conduce to the encouragement of the Kanaka to marry and erect a a separate cottage for himself and his family, and thereby contribute in no small degree, to an improvement in the habits of the people in morality and propriety, both of which are much outraged by the present system of crowding large numbers of both sexes into one small apartment, and also that the rapid decrease of the native population, which has occurred of late years, might be counteracted and arrested in its fatal career.

As a father inducement to efforts which promise so happy and very desirable results, our Society has adopted the system, acted upon in other similar institutions in older countries, by endeavoring to stimulate to exertions, by means of premiums to successful competitors, and

the exhibition of beautiful plate on the table of our show-room, will testify to the extent, which some may consider lavash and extravagant, to which the Society has gone in contributing this additional stimulus to industry and exertion. It is hoped and believed that such an inducement to enterprise, which must be eminently beneficial to themselves and result in advantages of a much more important character, cannot be generally necessary; but, if even a few minds are to be operated on more effectually, by means of a direct reward, in the form of a silver cup or medal, the good so attained, will amply recompense the Society for the large amount invested in premiums.

How far the purposes which the Society had in view in the diffusion of information, have been accomplished, is best evidenced by the valuable essays and reports which have been read before the Society, and printed in its three years transactions, and I may be permitted to say that many of these productions are of much merit, and would do credit to much more mature and extensive institutions.

Whilst it cannot be denied that there are many and serious difficulties, natural as well as artificial, and resulting from the peculiar circumstances in which we find ourselves, in the way of those who hope successfully to cultivate the soil of these islands, there are on the other hand many advantages and inducements which, with proper attention to seasons and circumstances, combined with energy and perseverance will, I am persuaded, render agriculture remunerative, as it is certain to be an agreeable and healthful pursuit. We have in these Islands, land to considerable quantity, equal in fertility to any part of the world; and with a climate unlimited in its range of temperature, what can be wanting but vigorous enterprise to secure successful and remunerative culture, provided always that that enterprise be left free and unfettered? But the cultivator here as well as elsewhere, must make up his mind to a liberal expenditure of both money and patience in the commencement of his career, as without proper precautions and judiciously directed industry, he runs the risk of having his hopes blighted, and the first fruits of his enterprise, fall a prey to the destructive insects which too often commit havoc on the first crop. I think, however, that we have the means in our power, in a great measure at least, to counteract and prevent this catastrophe by taking the proper masures for the destruction of the eggs and larvæ of those

ruthless destroyers. For the information of those who are not aware of the precautionI have alluded to, I may be permitted to explain, that by shallow or skin ploughing of the original grassy surface of the land about brought, for the first time, into cultivation, making a furrow of about 3 inches in depth, or by paring with the spade, and when thoroughly dried by the action of the sun's rays, piling the sods in heaps and burning them to ashes, the eggs of the insects which are always deposited in or at the roots of the grass and other weeds which naturally covers the surface will be destroyed, and the pernicious and devastating incursions of the caterpillars and other grubs, which would have sprung from the eggs, effectually prevented. Moreover, the seeds of the weeds which lie dormant in the soil, and which would certainly require vast labor and time to exterminate by any other process, will thus be also effectually eradicated, and the ashes are first rate manure. Having myself adopted the plan I have ventured to recommend to you, and with entire success, I am enabled to speak of it with confidence, and strongly to recommend its adoption. The first year's culture will not perhaps entirely eradicate the worms, but they will appear in very insignificant numbers, easily destroyed by a little attention to hand picking; but in the third year, if the system be carefully attended to, the ground will be found to be entirely free from them. I find moreover, (as I had been informed by others) that the caterpillars are local in their habits, and do not travel from place to place like the locust, and that the moth or butterfly which springs from them always returns with a strange instinct to deposit its eggs, only on its own original birthplace; at least such is my experience. Those who have commenced to cultivate lands, already in partial cultivation, on which there is no sod that can be burned, will find another equally effective, though more tedious remedy for the caterpillar, by carefully attending to the entire eradication, by hoeing or harrowing, of all weeds, and avoiding for two seasons the culture of all the crops on which the insects feed, so that by the slower but not less effectual process of starvation they will entirely disappear. I am enabled from my own experience to testify to the entire efficacy of this remedy also, on the two acres which form my garden, all the portion of which, cultivated and attended to as I have endeavored to describe, are now in this, the third year of my occupancy, entirely free from all these marauders, and I am informed that such is the experience of other parties on Kauai and elswhere who

have adopted the same means. I have gone more into detail on this point than some may consider warrantable in an address, but the vast importance of the subject of insects, must be my apology, and if I shall be so fortunate as to prevail even upon one person to adopt my suggestions, and thereby secure the successful culture of even one additional acre of waste land, I shall consider you and myself amply recompensed for the time devoted to it.

Another important and primary obstacle presented by nature, to the successful culture of the soil, in those parts of the islands subjected to long periodical droughts, is the aridity and baking of the earth into a firm body by the too powerful action of the sun's rays. Having learned in the old country, the great value of the deep culture of the soil, as a remedy for this and other evils, I have adopted it here on a small scale and have found it effectual, beyond my expectations. The earth where there is a sufficient depth for the purpose, must be broken up at least 2 1-2 feet deep, and carefully pulverized, after which it will retain throughout many months of continued drought, sufficient moisture brought up from below and held in the soil by capillary attraction, to nourish any ordinary crop, without the necessity of expensive hand watering, or surface irrigation, the value of which latter I consider very questionable, as the soil, saturated with a stream of water in summer and suddenly dried up by a vertical sun, becomes so baked and consolidated as to be almost impervious to the roots of any ordinary plants; and for this reason I have abandoned it. I am aware that the remedy I have suggested is obnoxious to the objection of being attended with too much labor and expense in this country where labor is so expensive and difficult to procure, but to this I would reply that it will be amply repaid by the vastly increased amount and improved quality of produce which land so cultivated will yield and that the expense and trouble attendant upon hand-watering and irrigation, will be entirely avoided, and the culture of the land, for all time to come, will be vastly facilitated, as it will not again bake and consolidate. On all land underlaid by stratum of black sand, the remedy I have suggested will be quite useless, and it is only where there is a clay or grey sand subsoil that it will prove effectual.

The difficulty of procuring an adequate amount of labor on these

islands at a remunerative price, is another great obstacle to farming here; but as that subject has already undergone ample discussion by those more competent to the task than myself, I shall merely say that so far as I can ascertain, the evil influence of the California excitement is steadily subsiding, and that as the natives begin to find that dollars are not so liberally squandered as they were three years ago, they show indications of returning to their sober senses, and accepting fair and adequate remuneration for their labor. The Chinese Coolies have given general satisfaction on the estates where they have been employed, and have assisted in bringing down the exorbitant notions of the natives to a more moderate scale, and I think it is to be regretted that we have no greater facilities for their further importation.

The absence of good roads and the consequent difficulty of bringing the produce of lands in the interior of the islands to market, must continue to be a serious obstacle to profitable farming, and I shall watch with anxiety at the present meeting for information on that important subject, and hope to hear that some effectual progress has been made in "mending our ways."

But perhaps the greatest and most paralyzing of all difficulties which we have to contend with here, is the want of sufficient capital, an abundance of which would, in a great measure enable us to overcome most of the other impediments to our progress; and so long as we are compelled to struggle against and labor under the incubus of a heavy balance of trade in the large surplus of imports over our exports, and at the same time prevented by impolitic restrictions and legal disabilities, from rendering vast tracts of land now lying utterly waste, available for the culture of a crop, for which, as I hope to prove, they are admirably adapted, and from which enormous returns might be received; and so long as our home market for our produce is limited and curtailed, because of the diminished number of ships which visit our harbor, in consequence of certain charges, which yield no equivalent in their paltry amount, for the large sums they cause to be withheld from us, I confess I cannot discover any mode of extrication from the dilemma in which our own folly has placed us.

The great importance of agriculture as the primary and direct

source of all individual as well as national wealth, as I have before remarked, entitles us to demand as of right, not only the total abolition of all restrictions to, and impediments in the way of the extensive culture and conversion to sources of direct profit of all those productions, for which the soil and climate of these islands may be well adapted, but also, that those to whom the government of the country is entrusted, will foster and cherish them with that paternal solicitude which is their bounden duty, divested of all fanatical prejudice and narrow-minded sectarianism. Nay more, when we consider the many and serious difficulties I have before alluded to, which nature and our peculiar circumstances, have thrown across the path of the residents of these islands, and which, it cannot be denied, renders farming a hazardous and difficult enterprize; it does seem to me, that the necessity which is imposed on the Legislature and Government, to foster and assist those who possess the nerve and capital to embark in that pursuit, which alone can raise us to an independent position, is here greatly augmented, and it the more behooves both to avoid with the utmost caution, any act which can tend to restrict or embarrass the man who is willing to undertake the hazardous work of endeavoring to explore and bring to light any of these hitherto undeveloped sources of that capital, so much required, yet so lamentably deficient among us. Nothing short of the clearest and most conclusive evidence amounting to actual demonstration, (drawn from sources free from all taint and suspicion of fanaticism and prejudice,) of certain danger to the welfare of the nation, can warrant those who preside over the destinies of a young and struggling country, in restricting or preventing the culture and conversion to sources of wealth, of any produce of our soil, from which a considerable amount of profit can be extracted, every dollar of which, will be just so much added to the solid capital of the country.

One of the most important incentives to agricultural enterprizes which it is in the power of any government to furnish or at least to encourage, is an abundant and remunerative home market, and as I have before remarked, that has not heretofore been found here, to the extent of which I think it might and ought to be afforded.

I hold the opinion in common with those among us whose opinion I

most respect, that if our ports were baptized by the magical and fascinating name of "Free Ports," following even at the eleventh hour in the wake of Valparaiso, Tahiti, Hong Kong, Singapore, Sydney and other ports of the Pacific, the amount we should receive from the greatly increased number of ships which would enter our harbor, and the large amount of merchandize of which the new warehouses (which would rise, like magic on our hitherto neglected and barren reef,) would be the receptacles, could vastly more than compensate for the paltry amount now drawn from the harbor dues levied under the present suicidal system. Our geographical position, which has placed us in such close proximity to so many great markets, for the manufactures of the Western World, combined with the establishment of several lines of steam-ships now in actual progress, would if we were unfettered from these obstructive charges, ensure the establishment of this port as the great entrepot of the North Pacific, and I anticipate with unfeigned delight, the erection of wharves and spacious stores and ware-houses at no distant date, as the depositories of valuable cargoes, and the concomitant expenditure amongst us of large sums of money, consequent on an increased amount of shipping employed in bringing and taking away those goods, as well as large quantities of our wines and other products to other adjacent markets. When that much to be desired period shall have arrived, we shall no longer be compelled to witness day by day, the depressing and melancholy spectacle, presented to our view for nearly half of our time, in the total absence of all square rigged vessels, from our safe and commodious harbor. What else, I would ask, but a conviction of the truth of the view I have taken of the subject, has induced the places I have above enumerated to abolish these impolitic imposts. If port charges were beneficial or justifiable it is not probable that these places would, one after the other, have abandoned them; and if they are not beneficial or justifiable, are we warranted in retaining them? Are we so much wiser or richer than they, that we can afford to be obstinate? I rejoice to see the first attempt made during the present session of our Legislature, for the total abolition of all harbor dues, which had been previously relaxed by the admission of all passenger ships, last session, and I entertain a strong hope that as the matter

has been brought under public discussion, and as the arguments in favor of the total ablition, so vastly preponderate, and must bring conviction to every unprejudiced mind, the next session of the Legislature will achieve our emancipation from an impost which has too long retarded our national advancement. The great principles of free trade are now recognized as paramount by a majority of the most enlighted nations of the world, who are at the present moment remodeling their laws and institutions in conformity with them, and I trust we shall not stand still, while the rest of the world is bent upon an onward progress. Commerce, free and unrestricted, is the most available channel, through which the means of developing our internal resources can be attained. An abundant and constant supply of shipping in our ports, will create an equally great and abundant demand for our agricultural productions. And thus rapidly increase our wealth and capital, and encourage us to greater, because more remunerative industry. Agriculture can never be prosperous or remunerative where markets are uncertain, fluctuating or periodical, and if it shall please Providence to enlighten our Legislature so as to secure their adoption of the great principles now triumphant in other lands, so far as they are suitable to our condition and circumstances, we shall no longer be so utterly dependant upon our whaling friends or so deserted and melancholy through one-half of the year. It is perhaps known to the majority of those whom I have the honor to address, that the port of Valparaiso owes its wealth and importance, and has risen to its present eminence as a commercial city, solely as an entrepot, a great storehouse for supply of other markets on the Western Coast of America, its home demand for the enormous amount of merchandize piled in its stupendous storehouses being very insignificant, and it is plain enough to my mind, that our position relatively to other great markets is greatly superior to that of Valparaiso.

It is not my purpose, nor is it within the scope of my present duty, to allude, in detail, to the various crops adapted to our soil and climate, but as I have before alluded pointedly to a restriction on the culture of one crop, for the purpose of export, I may be allowed to state my views, (which are in common with a large portion of the

community) on the subject of the culture of the grape vine, and the policy of the manufacture of wine for export in these islands. Nor am I deterred from laying these views before you, by the fact that they are not in unision with the votes of the majority of an "august assembly in another place" on a late occasion, believing as I honestly do that a large portion of that majority were grossly misled, and will, when next the matter shall be brought before them, rectify the blunder they have committed.

The surface of these Islands is composed of volcanic matter, more or less disintegrated and decomposed and resembling in its texture and chemical qualities those countries where the grape has for many ages been most extensively cultivated, and where wines of the highest quality are largely manufactured and exported.—Should this statement be questioned, I cannot here afford space to cite numerous authorities, but shall content myself with a quotation from the last edition of McCulloch's Commercial Dictionary, a work collated with enormous pains from the best and most reliable sources of information on the various subjects it discusses. He says, "The grape vine succeeds extremely well in volcanic countries. The best wines of Italy are produced in the neighborhood of Vesuvius. The famous Tokay wine is also made in a volcanic district, so are several of the French wines. Hermitage is grown among the debris of granite rocks."

I have seen it objected by somebody, who assumes the modest title of "Common Sense" that we are "too far south" for the successful culture of the vine, I presume because of our too high temperature. I find however, McCulloch states that "the limits within which the grape vine is cultivated in the northern hemisphere of the old world, vary from 15 degrees to 48 or 52, and if McCulloch be rightly informed, that they are grown so far south as latitude 15, I presume that I am safe in stating they will flourish in 22 north. But it is an established fact that the grape does grow luxuriantly and produce abundantly in parts of these islands. It is threfore quite superflous to waste time in combating such a frivolous and untenable objection as this. Moreover I am told, wine of excellent quality, has lately been made in these islands, and I think under these circumstances, I may fairly assume that the grape can be successfully and profitably culti-

vated here for wine making for export, on thousands of acres of lands such as those described by Mr. McCulloch. In 1848 I visited some of the vineyards of Port Philip, in Australia, established by Swiss and German settlers and found them all located on stony hill sides, usually facing the east or south-east, such as abound here, and on soil exactly analogous to ours. I am happy to be enabled to quote on this point so eminent an authority as the Hon. Luther Severance, who says in his address read before this Society in 1851, that "we may look forward to the time when the valleys of these islands shall be cultivated like gardens, and *terraced mountain sides with vineyards* like those of Madeira, Vesuvius and Etna."

That the manufacture of wine for export is a source of great revenue, is proved by abundant facts. I find by the last report on the census of California that many of the lately settled districts have already yielded large amounts of wine; for instance, Los Angelos and Santa Barbara have yielded for the year 1852, 72,462 gallons of wine; producing $146,924. I also find from official statements from Australia, that in 1845 there were 611 acres of vineyards producing 54,996 gallons wine, whilst in 1850 the amount of land under wine culture had increased to 1,069 acres, producing 111,085 gallons. Again I find it stated in "Hunt's Merchants Magazine" that the new German vineyards in Missouri are progressing rapidly, and that there are already 200 acres planted at the town of Hermanes, which in two years are calculated to yield 25,000 gallons of wine and to increase to 50,000 in good seasons.

An acre of land in vines, is reckoned to be worth $1000. How many hundreds. nay thousands of acres ot waste land might be converted into smiling vineyards, yielding their tens of thousands yearly, to the hitherto meagre produce of our islands, and by so much increasing our actual capital. Are we then, I may be permitted to ask, in a position to reject on any but the most conclusive evidence of some direct and formidable injury to result from it, a source of national wealth so vastly important and at the same time, so easily attainable as this? If an acre of vines be worth $1000 per annum, how great is the culpable responsibility of those who have hitherto obstructed their culture.

This is not exactly the fitting occasion for the discussion of the "main" objections to wine growing, preferred by those who view the subject through a distorted and unhealthy medium, and who erroneously assume that use must result in abuse, viz: that it would conduce to intoxication and consequent demoralization of the people. I shall content myself on the present occasion by stating that the simple historical and statistical fact, within the knowledge of all well informed men, that all the wine-growing countries of Europe are eminently and invariably conspicuous and remarkable for their total absence of intoxication in every form, and that they are beyond all comparison the most temperate countries in Europe. Perhaps it will be objected to by some who dissent from me, that I have made the present address the vehicle of a political disquisition, to which I shall reply: that the connection of all the topics I have introduced, and their importance in relation to the subject of agriculture, are so dear and inseparable, that I could not, without a dereliction of duty, which is not my wont, avoid the allusion I have made to them.

I beg leave to notice another plant of a different kind, the culture of which from my own experience, I would gladly see more generally adopted. I mean the "Papaya" (the Carica Papaya of Linnœus) which is raised with great facility from the seeds found in the pulp of the fruit, and will flourish on any reasonably good soil. The fruit is an excellent article of home consumption for tarts, and also used as a vegetable, and is of great value as good and nuitritious food for poultry and swine. They may be planted at 6 to 8 feet apart each way and will bear within 12 months. Some which I have grown have yielded me over 100 pounds of fruit each, and as an acre will contain 800, we shall have the enormous amount of 40 tons of fruit to the single acre. Besides, a full crop of Pumpkins can be had on the surface of the Papaya land, as the one will benefit the other, the Papaya by his graceful top affording a gentle shelter to the Pumpkin from the too powerful action of the sun, whilst the Pumkin will freely reciprocate, by covering with its vines the surface of the ground, and preventing the too rapid evaporation of the moisture requisite for the full development of both. The Papaya, too, possesses the valuable quality of rendering tough animal food, perfectly tender, by simply

suspending it for a few hours amongst the leaves, the exhalation from which has a specific influence on animal fibre.

It is an admitted fact, that the demand for hogs and poultry, has always been very inadequately supplied here, and I know of no way by which that defect can be so readily and effectually remedied, as by the method I have above suggested. On a property in which I have some interest in Kauai, we are adopting it on a large scale, and I recommend others to follow our example.

Even at the risk of being tedious, I cannot omit referring to another important crop which I hope to see generally cultivated among us. I allude to rice, which has now become almost indispensable to the numerous Chinamen who form no unimportant part of our population, and I trust soon to be increased by fresh arrivals.

That rice of excellent quality can be raised on these islands will scarcely be denied, and the fact has been brought to the test of experiment by Mr. Webster, of Koolau, who has this season grown excellent Paddy, and informs me that the operation of converting it into rice by freeing it from the husk, is one of easy accomplishment by simple and cheap machinery. In Wailua, on Kauai, they are experimenting on its culture, and I would solicit many others to try the experiment. We have been sending away from ten to twelve thousand dollars yearly of our hard cash, to purchase this one article, which can with ease be raised at home, and I hope ere long to find this one drain on our exhausted means effectually terminated by the home grown article.

The beautiful specimens of wheat and barley from Maui, exhibited in our Show-room, give abundant proof that the means to supply the home demand for flour by home grown grain, are also within our reach, and when it is recollected that about $75,000 are yearly drained from our meagre capital, in the purchase of this article, we cannot, collectively and individually, devote too much attention to a department so vitally important. I learn with pleasure that the cultivation of wheat is creeping into Hawaii, where there are thousands of acres admirably adapted for its successful and profitable culture.

That we can grow corn, equal in quality to any part of the world is proved already, and further illustrated by the sample now on exhibition in the Show-room. We send away between two and three

thousand dollars yearly in the purchase of corn meal and grain, every cent of which we could keep at home by a home grown supply.

No plant is more congenial both to our soil and climate than tobacco, or more easily capable of being made an important and valuable article of export, and yet, strange to say, its culture has hitherto been so much neglected, that instead of exporting several thousands of dollars worth yearly, we actually export not tobacco or cigars, but what is still more valuable to us, in the shape of some $30,000, to pay for its purchase for our own consumption. I learn from a gentleman from Kauai, now present, who has visited the plantations of Messrs. Opitz and Gruben, within a few days, that notwithstanding the unusual drought of the season, they have good crops of tobacco of first quality, equal in flavor to the boasted produce on Cuba; and that in all probability over half a million of prime cigars will be turned out this season, and that they anticipate making some two millions next season. San Francisco and Australia will afford a ready and remunerative market, for all the good cigars we can raise here, and as precautions have been taken, to avoid in future the errors which admittedly made last year's cigars inferior in quality, I trust to see this important branch of agricultural industry fully and profitably developed.

I find that in the articles of flour, corn, rice tobacco and wine, all of which we can, by industry and perseverance raise on these islands, we send abroad upwards of $125,000 yearly, and that too, in hard cash, for be it remembered, we have no product to give in exchange for any of them, and if "a penny saved is a penny gained," shall we not unite as one man, to encourage and assist those enterprising individuals, who have embarked in their home culture?

The articles of wine and cigars, ought to be looked forward to as articles of future export, second to none, and exceeding in amount the two great staples of sugar and coffee, both of which we learn from the able, luminous and comprehensive report of our President this morning, are in a prosperous and promising condition. That excellent and very satisfactory report, is as gratifying as it is instructive, as we learn from it that all the various interests connected with the culture of the soil, are recovering from the paralyzing effects of the disasters in former years. Its comprehensiveness, touching as it

does, on every branch, renders it superfluous for me to allude to them, and it cannot be denied that our Society has been in some degree accessory to this gratifying improvement in the condition of our most important interests.

The labors and duties of a properly conceived and efficiently conducted Agricultural Society are not confined to ploughing, sowing and reaping. To foster and encourage all interests connected with the occupation and culture of the soil, and to unite with them all those branches of industry from which they draw nourishment and support, is the peculiar province of our Society. Agriculture and commerce are, as it were *Siamese twins*, so vitally bound together, and inseparably united that it is impossible to sever them without the destruction of both. They are the right and left legs of a nation. They must move in concert. You cannot advance the one while you cripple the other, and if one be paralyzed by impolitic restriction, or any other cause which impedes its progress in the march of prosperity and advancement, the other will most assuredly wane and decay. It is only by a union of all interests, commercial, agricultural, pastoral and manufacturing, moving in unison, free and unfettered, and guided by the sound and undeviating principles of political economy (a science in which all who aspire to govern well, ought to have some knowledge) divested of all "isms" and "scisms," and freed from the rubbish of antiquated prejudices and narrow minded bias, that we can hope or aspire to attain to that exalted position which is, I am convinced, the earnest wish of one and all who hear me, and to which, under enlightened councils and sagacious management, these islands are capable of attaining. Our geographical position, as I have already said, points us out as the emporium and entrepot of the North Pacific, and nothing but our own indiscretion can retard our progress to that much to be desired consummation, and no one will doubt that this Society can render much valuable assistance in achieving the great end.

The rapid strides made in the commerce of the Pacific in the last few years, and which is destined to a great and speedy increase, has turned the eyes of the old world towards us, and has put all other ports and places into which it ramifies and extends, on the alert, whilst we seem as yet hardly awakened from our stupor, or aware of

the great fact that all the world is going ahead, whilst we, if not actually retrograding, (and the doings of some of our public bodies of late would indicate that we are tending towards the "dark ages") have not yet taken our place in the ranks, in the onward march of progress. Unless we desire to be left "high and dry," whilst our neighbors are proudly floating on the flood tide of prosperity, we ought to be up and doing, lest by an adherence to obsolete ideas utterly unfitted for the era in which we live, we shall find ourselves "shelved" and those advantages and means of improvement which we have been incapable of appreciating, availed of by some more enlightened and more fortunate community.

Is it not a source of deep regret that we should be so entirely dependent for our means of wealth, and a home market for our produce, on the periodical visits of whale ships, whilst one-half the year our commodious basin is unoccupied, and our streets and stores almost entirely deserted? In the course of nature, whales must become diminished by the enormous mortality to which they are constantly subject, and when the day shall arrive, as come it must, when the enterprising men of New England shall find the whaling grounds of the North Pacific unremunerative, and their ships shall cease to enter our harbors, we shall find ourselves entirely without customers or trade, and doomed to fall back into the primitive condition of a fishing village, unless in the mean time we shall have availed ourselves of some new source of wealth, by encouraging other interests to visit us, and send ships and cargoes which now shun us, and I fear will, under our present system, continue to do so. Ere long I earnestly hope to see our inter-island intercourse facilitated by steam or Ericson ships, which will collect and carry from every nook and corner of the several islands, all crops which can be raised upon them, a large proportion of which is now lost because of the want of means to carry it to market, and when the day shall arrive when merchant ships shall float in our harbors as they do in Valparaiso, at all seasons, and when the lines of steamers about to ply between the great Continents of America and Asia and the rapidly advancing British Colonies of Australia, shall pay us their periodical and regular visits, we shall no longer have to complain of want of demand for every variety of product which our climate is capable of yielding in such teeming abundance, and from which the farmer and gardener will both draw ample

remuneration for their labors. Steam communication will enable us to supply the markets of California with oranges, bananas and other fruits for which hitherto no market has been found, and which being in such vast demand there, will yield us an ample return for the labor and capital bestowed on their culture. A great influx of new settlers and capital will necessarily result from a more liberal policy, and so far increase our home market.

In my mind all this desirable state of matters is within our reach, and may be atttained if we shall exert ourselves to attain it. Let us collectively then, as a practical Society, and each of us within his own proper sphere, and to the utmost of his individual means and opportunity, endeavor to achieve so desirable and all-important an end, in advancing the common interest of our common country; let us unite as one man to attain a consummation so devoutly to be wished, and where there is unity of purpose there will not be wanting a unity of means to improve those advantages which all of us possess in various degrees, and which have so long been permitted to lie idle and neglected, and when the day shall arrive when we shall have attained to the realization of what I have feebly attempted to foreshadow, we shall have the happiness to see our little islands the fertile and prosperous land for which kind Nature seems to have destined them.

On motion of Rev. S. C. Damon, the thanks of the Society were tendered to Mr. Montgomery, for his interesting and instructive address.

On motion of Dr. Newcomb, a copy of the address was requested for publication.

Adjourned, to meet at the Court House, to attend the Fair.

Wednesday, June 8th.

The Society met at noon, and the several committees proceeded to examine the various articles presented for exhibition, pertaining to their respective departments. It was remarked that, in consequence of the prevalence of the sickness in Honolulu, there were fewer articles exhibited than at the last fair,—some were prevented from sending in their productions by the sickness of their people.

The exhibition remained open during the day and evening, and was attended by a large proportion of the residents of Honolulu. In the evening, the prizes awarded last year were distributed, consisting of silver cups, medals and books, to the value of about $900.

At 8 o'clock, P. M., a sale at auction took place, of articles exhibited, at which F. W. Thompson, Esq., officiated, with his usual spirit and success. The sales amounted to between $400 and $500; after which the Society adjourned, to meet at the chapel.

Thursday, June 9th.

Met at the chapel, and proceeded to the hearing of Reports of standing committees. The following were read and accepted.

Of the Committee on Statistics, by C. R. Bishop.

Of the Committee on Tanning, by J. Hardy.

The reading of Reports of standing committees was suspended, to hear the Reports of the Committees on Premiums, which were read and adopted.

Report on Agricultural Products.

The undersigned, Judges of agricultural products, at the Fair of the Royal Hawaiian Agricultural Society, held this 8th day of June, 1853, beg leave to offer the following Report.

The show of the agricultural products this year falls short of that of last year, as regards the variety and quantity of articles exhibited; but, in point of quality, the articles shown this year, with few exceptions, surpass those hitherto presented.

Sugar.—The samples of sugar are quite numerous, and we have had more difficulty in deciding on the rival claims of the several competitors in this article than in any other. Being of opinion that the premiums offered by the Society for sugar, are intended for raw (or muscovado) sugar only, we consider the best sample from the Koloa plantation, which we are informed was refined by the use of animal charcoal, as not coming within the rules regulating the distribution of premiums. At the same time, in the exercise of that discretion with which we believe ourselves invested, we recommend that a distinct premium be granted by the Society, to Dr. R. W. Wood, for the beautiful sample of refined sugar above referred to; and that, hereafter, if

the Society think it desirable, separate premiums should be offered for raw and refined sugars, respectively.

We award the first premium for sugar to L. L. Torbert, of Honuaula, and the second to H. A. Pierce & Co. of Lihue.

We feel called upon to mention, as worthy of particular notice, the excellent samples exhibited from the plantations of Mr. Reynolds and of Mr. Judd, respectively. The former is a really marketable article, while the latter does not appear to as good advantage as it might do. The specimen from Lihue, which carries off the second prize, is a handsome article, and was taken indiscriminately from a whole cargo.

SYRUP.—We award the prize for Syrup to L. L. Torbert of Honuaula. There are but two competitors for this prize.

COFFEE.—To our surprise, but one sample of coffee is presented this year, that of Mr. B. Pitman, of Hilo. It is of excellent quality, and takes the premium.

WHEAT.—There is no competitor for the first premium in wheat, but we are of opinion that H. J. G. Croswell of East Maui, is entitled to the second prize, which we award him accordingly. Several fair samples of wheat in the ear are presented.

CORN.—We award the first premium in corn, to the Rev. J. S. Emerson of Waialua, and the second to Lieut Reynolds, of Kauai.—The corn exhibited by Mr. Emerson is very fine, and we take pleasure in noticing several samples of fair quality, from other parties.

OATS.—No competitor for the prize. A fair specimen of oats in the ear is exhibited by John Smith, of East Maui.

BARLEY.—We award the premium for Barley to Mr. Hollingsworth, of Ewa, who presents samples of two different kinds. Specimens of Barley in the ear are exhibited from Maui.

ARROW-ROOT.—There are three competitors for this prize, and the specimens exhibited are all choice. We award the premium to the Rev. C. B. Andrews, of Molokai.

IRISH POTATOES.—Only three samples are exhibited; two from East Maui and one from Ewa. We award the premium to G. D. Gilman & Co., of Lahaina.

SWEET POTATOES.—We award this premium to Kalolohe, of Honolulu. Numerous fair specimens are shown.

KALO.—We award this premium to H. Kaahalama, of Kealakekua. Several fine specimens are shown by A. Paki and others. We recommend that, hereafter the premium be offered for ten heads, instead of twenty.

BUTTER.—There is quite a falling off in the number of competitors this year, from that of last. We award the premium to the Rev. C. B. Andrews, of Molokai.

CHEESE.—None of the specimens exhibited are first rate. The best is that of Mrs. Whitney, of Kauai, to whom we award the premium.

TOBACCO.—There is but one specimen of Tobacco presented, that of Messrs. Archer & Gruben, of Kauai. It is of very superior quality, and well deserves the premium.

In addition to the above, we take great pleasure in noticing specimens of several articles, for which no premiums have been offered, among which are the following, viz:

ONIONS.—By L. L. Torbert, the largest and finest we have ever seen on these islands.

BEANS.—Several good samples, by Mr. Hollingsworth, Mr. Rice, of Punahou and Capt. Adams.

CORN MEAL.—Good specimens by Messrs. J. Robinson & Co., and Mr. Hollingsworth.

PADDY.—A good sample, by Mr. Webster, of Kaalaea.

We would recommend that in future, distinct premiums be offered for most of these articles.

We cannot close our report without mentioning, with admiration, the Pie Melon Preserve, presented by Mrs. John Ladd; the marmalade made from oranges and papayas, respectively, by Mrs. Holdsworth, and the Strawberry Jelly of Mrs. Gilmore.

We would recommend to parties competing for premiums at the Society's Fairs, hereafter, that they pay particular attention to the *quantities* required to be presented, in order to bring their articles within the regulations.

All of which is respectfully submitted.

D. M. WESTON,
G. M. ROBERTSON,
B. F. SNOW.

REPORT OF THE COMMITTEE ON PREMIUMS, HORTICULTURE AND FLORICULTURE.

GENTLEMEN:—Your Committee on Horticulture beg leave to report that the department assigned to them for awarding premiums include Flowers, Fruits, Garden Vegetables, Grapes, Dried Figs and Raisins.

Your Committee believe that there is no better test of the refinement of a people, than their progress in this department. A cultivated taste cannot spring up in a desert, nor among weeds and brambles.—He who loves the beautiful, will dwell if possible, among flowers and fountains. A man of refined taste will love to see his table loaded with a profusion of his Maker's bounties, and they will have an additional relish, if grown in his own garden and nurtured by his own hand.

We believe that your Society may do much towards creating a public sentiment in favor of this delightful pursuit. We hope the day is not far distant when there shall not be a house in Hawaii nei without its garden; when, instead of half a dozen competitors for prizes, your committee will have to spend the whole day in awarding prizes, by reason of the profusion of fruits and flowers; when every lady may cull her own boquets and spread her table with the fruits which her hands have reared.

Of the flowers, your committee only regret that from the many successful florists of our city, the contributions were no more numerous. There were but few competitors, but the choice collection of flowers exhibited, and the pleasing variety, numbering from one garden more than sixty varieties, show that there is abundant encouragement for those who are willing to devote a little time to this delightful pursuit; and we could not but feel how true it is of Hawaii nei, that,

> "In all seasons,
> Flowers expand their light and soul-like wings,
> Teaching us, by most convincing reasons,
> How near akin they are to human things."

The Society are under many obligations to those who contributed so largely to the attractions of the Fair, by their beautiful boquets.—We noticed contributions from Mrs. John Ladd, Mrs. Chas. R. Bishop, Mr. Montgomery and from Mr. Janion's garden, all of which exhibited

great taste in the arrangement, and all were worthy of a premium.—Mrs. Penhallow exhibited a curious *lusus naturæ*, in the form of a Lilac, with beautifully variegated leaves, and a very fine Thumberga. We also noticed a splendid native plant, exhibited by A. Paki, which suggested to us to recommend to the florists of the islands, to pay more attention to the cultivation of indigenous plants.

A very vigorous Osage Orange Tree was exhibited by Mr. H. M. Whitney, and we hope to see, before many years, our yards and gardens enclosed with hedges, of this beautiful plant. We cannot fail to speak of the splendid Water Lily exhibited by Mrs. Judd, and introduced into the islands by Dr. Judd, from Havana, in 1850: and the beautiful German Asters in the prize boquet of Mrs. Hillebrand.

Your committee have awarded premiums as follows:

FLOWERS.—1st premium,	greatest variety,	Mrs. Judd.
2d "	boquet,	Mrs. Hillebrand.
FRUITS.—1st "	- - - -	Capt. Adams.
2d "	- - - - -	Dr. Judd.
VEGETABLES.—1st "	- - - - -	Capt. Adams.
2d "	- - - - -	J. Montgomery.
GRAPES.—premium,	- - - - -	Wm. Ap. Jones.
RAISINS, "	- - - -	Mrs. Whitney of Kaui.

No specimens of Dried Figs were exhibited. Your committee would therefore recommend that the premium offered for this article, be awarded to A. Paki, for very superior fresh figs exhibited by him. They would also recommend that a premium of one dollar each, be awarded to S. M. Kamakau and to Kalolohe, for very fine Sweet Potatoes, the latter having raised his in one of the driest parts of our city.

Your committee noticed many articles for which premiums are not offered, among which were fine peaches, exhibited by J. Robinson; papayas, by J. Booth; tamarinds, by Mrs. Whitney and J. Booth; very superior squashes, by Mr. Hollingsworth and Mr. Rice; bread-fruit, by Wm. Gilman; a very curious banana, called the mummy banana, which flowers, and developes its fruit within the stalk, exhibited by Kapeau; some beautiful gold fish, which are fine ornaments for our gardens, by Samsing, and other articles which we have not space to enumerate.

In conclusion, your committee venture to recommend that a premium of —— be offered for the garden, not to exceed —— acres,

which shall contain the greatest variety of vigorous vegetables, fruit trees and flowers, the number to be specified in the application, and to be certified to by the written certificates of three disinterested persons. They would also recommend that a prize of —— dollars be offered to the individual who shall, within one year, bring into successful cultivation, the greatest variety of vegetables, fruits and flowers, not before grown upon the islands, the number of varieties not to be less than ——.

All of which is respectfully submitted.

T. CLEGHORN,
A. B. BATES,
E. G. BECKWITH.

REPORT OF THE COMMITTEE ON MANUFACTURES.

Mr. President and Gentlemen of the R. H. Agricultural Society:

Your committee, to whom was assigned the duty of awarding premiums for the best specimens of Hawaiian manufacture would submit the following report.

The articles offered for premiums in this department for variety and quality compare favorably with those exhibited last year, yet it is a matter of regret, considering the importance of this branch of industry, that our infant Kingdom and infant Society, render our labors in this respect so light; the amount of manufactures being very limited, and the number of competitors quite as much so. Still among the very creditable display of stock, agricultural, and horticultural specimens exhibited, your committee are gratified to find the germ of manufacture, and would award as follows:

SALT.—From Puuloa, best exhibited, to C. W. Vincent.

The superior specimens of salt from these works, together with the amount which your Society are aware is turned out from them, show what may be done in this branch of domestic manufacture.

Sole and Upper Leathers.—Best specimens from Hilo, exhibited by B. Pitman.

The leather exhibited exceeds both in variety and quality that of any previous year—the upper leathers are well tanned and are on the whole an improvement upon the past, although your committee are of the opinion there is yet much room for improvement in the finish of all the upper leathers exhibited, which improvement must be made before our leather can compete with foreign even in our own market.

Your committee noticed with pleasure some very fine specimens of Hats exhibited by Mr. J. F. B. Marshall, and made at Waimea, Kauai, for which they are not aware any premium was offered, but which they think are not the less deserving, especially as they were sold at from three to five dollars each, for the benefit of the Society.

Lamp Mats of the same material as the hats, and offered by the same gentlemen, your committee noticed as selling at one dollar each, and think should receive encouragment by a small premium.

Among the samples of needlework exhibited, your committee feel much pleasure in noticing those from the "*Sewing School*" at Kaluaaha, Molokai, composed entirely of native girls, the shirts particularly, cut and made by Hale, Mariana, Nuilima and Aumauina, were most thoroughly made, far surpassing the majority of similar executed by foreigners. There was a decided preference in the work, but in consequence of the labels having been removed before the committee examined them, they were unable to identify the maker of each.

Ladies' Dresses of superior workmanship, cut and made by Ana, Mahoe and Diana, also pupils of the above school.

A large Quilt of beautiful pattern and workmanship, by Kanui, Kauwa, Kipa, Kenahu, Kalena, Kamala, Lepek and Luka, the younger pupils of said school.

Your committee are of opinion that this branch of domestic manufacture is well deserving of encouragement, and should be stimulated by the award of premiums, even though small, and would therefore recommend that the Society, through the Board of Managers, place the sum of ten dollars in the hands of the instructress of said school, to be distributed by her as she may think best, among the meritorious of those contributing.

Some very elegant specimens of NEEDLEWORK, by Mrs. H. J. H. Holdsworth, Miss Anna E. Clark and Miss Sarah Clark, were exhibited which displayed much skill and taste; particularly an imitation of Irish Lace by Mrs. Holdsworth.

A pair of COTTON HOSE knit by Kahola, a native girl, attracted much attention by the very skillful mannner in which they were executed. The highly artistic Lamp Shade by Mrs. Newcomb was as beautiful to look upon as it would be tranquilizing in use.

Among other articles your committee noticed an EAGLE PLOUGH, No. 20 of Ruggles & Nourse's make, sent to the Fair by Messrs. Hall & Dimond, which seems extremely well adapted to the want of the agriculturists of these islands. Also an OX CART, made by Mr. Mansfield, of Bridgewater, Mass., from the store of Messrs. Castle & Cooke, which exhibits in its combination of wood and iron a strength peculiarly adapted to the hard usage of this country.

Of the merits of the Monochromatic Picture exhibited, your committee hardly feel competent to decide, from their limited acquaintance with this style of drawing, but deem it an excellent picture, and highly creditable to the exhibitor, Mr. E. G. Beckwith, of the Royal School.

In conclusion, your committee would respectfully and briefly suggest, that in their opinion, the number of premiums heretofore allotted to the manufacturing branch of industry are far too limited for its proper encouragement. Respectfully submitted. J. H. WOOD,
T. METCALF,
H. RHODES.

Honolulu, June 10, 1853.

REPORT OF THE COMMITTEE ON STOCK.

To the President and Gentlemen of the R. H. Agricultural Society:

Your Committee on Stock, after having carefully examined the various animals exhibited at the present Fair of the Society, beg

to report that in their opinion, the following persons are entitled to the premiums offered by the Society, for the animals, &c., exhibited by them as set forth below in this our report.

Stallion, imported,	J. Meek.
Mare, do	R. C Janion.
Cow, do	C. G. Hopkins.
Ram and Ewe,	Alexander Adams.
Wool, best,	Mr. Moffit.
do best white fleece,	J. Meek.
Gelding, native rearing, 3 years,	M. C. Monsarrat.
Yearling, do do 2 do	J. Meek.
Bull, do over 2 and under 3,	C. G. Hopkins.
Cow, milch,	Mrs. Chamberlain.
Steer, for slaughter,	H. Sea.
Boar,	J. Meek.
Sow and pigs,	J. Meek.
Fowls, the 6 best, including 2 cocks,	S. C. Damon.
Native draught horses,	Dr. Judd.

Your committee would beg to remark that they labor under much embarrassment in determining the relative qualities of the two imported Stallions exhibited, each having in the opinion of your committee very superior points; and either of which must greatly improve our breed of horses.

Your committee regret to report that there were several classes of animals for which premiums were offered by the Society, of which there were none exhibited. Your committee would also remark that there were several exhibited for which no premiums had been offered. Amongst the latter class they would mention some very fine Pigs, 7 months old, exhibited by Mr. Moffit, for which they would recommend a premium of $3. They would also notice with approbation four fine pigs, of the Suffolk and Mackay breed, presented by Messrs. Pierce and Brewer, of Boston, 8 months old, as a good breed for the Society to encourage. A fine hog of immense size and weight, (620 lbs.) was exhibited by Gov. Kapeau, for which the committee would award a discretionary money premium of $2.

All which is respectfully submitted.

B. PITMAN,
J. DUDOIT,
L. L. TORBERT.

Honolulu, June 9, 1853.

The Society next proceeded to the annual election of officers, under the direction of the Executive Committee, which took place by ballot. The following persons were declared by them to be duly elected, viz:

Hon. Wm. L. Lee, President.

B. Pitman, G. S. Kenway, L. L. Torbert, C. B. Andrews, R. W. Wood and Jas. F. B. Marshall, Vice Presidents.

George Williams, Treasurer.

John Montgomery, Cor. Secretary.

E. O. Hall, Rec. Secretary.

S. Reynolds, B. F. Snow, C. R. Bishop, W. Newcomb and S. N. Castle, Executive Committee.

The appointment of Standing Committees was committed by vote of the Society to the President in conjunction with the Board of Managers.

The following reports were presented in order, and accepted.

Of the Committee on Garden Seeds and Fruits, by S. C. Damon and T. Cleghorne.

On Grains, by W. H. Rice; and a letter by J. T. Gower on the same subject, and another from Wm. Reynolds, on Corn.

On Neat Cattle, by R. Moffit.

On Capital and Banking, by L. Severance.

On Labor, by J. F. B. Marshall and G. Rhodes.

On Butter, by J. S. Emerson.

The hour for adjournment having arrived, it was Resolved, That when this Society finally adjourn, it adjourn to the second Tuesday in June, 1854, at Honolulu.

The following resolutions were unanimously passed, viz:

1. Resolved, That the thanks of this Society be presented to the Ladies and others, who so kindly contributed flowers and refreshments for our recent exhibition.

2. That the thanks of this Society be presented to Messrs. F. W. Thompson & Co., A. P. Everett and M. C. Monsarrat, the auctioneers of Honolulu, for their generous donation to the funds of the society.

3. That the thanks of the Society be tendered to Henry A. Pierce, Esq., of Boston, for his very generous contributions and exertions to promote the interests of agriculture on these islands.

4. That the thanks of the Society be tendered to Messrs. Pierce & Brewer, for their donation to this Society of the freight of the swine recently imported from Boston.

5. That the thanks of the Society be presented to B. P. Johnson, Esq., of Albany, N. Y., for his very acceptable present of seeds and books, and also for his kind efforts to promote the interests of our Society.

6. That the thanks of this Society be presented to the House of Representatives for the use of their Hall during our Exhibition, and also to the Chaplain of the Seamen's Friend Society for the use of the Bethel.

7. That the thanks of the Society be presented to F. W. Thompson, Esq., for his efficient services as auctioneer, at the Fair.

Adjourned to half-past 7 P. M.

At the evening session the reading of the reports was resumed, and the following were accepted.

Of the Committee on the Vine and Fig, by T. E. Taylor.

On Tobacco, by D. Baldwin.

On the Irish Potato, by L. L. Torbert.

On the Seasons, by J. S. Green.

On Roads, by Wm. Webster.

On Roads, Harbors and inter-island navigation, by T. Metcalf.

A letter was also presented on the subject of Guano, from R. C. Wyllie.

A report from J. S. Green, Corresponding Secretary of the Makawao Agricultural Society, was also presented by the President.

A discussion of considerable interest ensued, during which many important suggestions were made, which will be embraced in the future direction of the Society, by the Board of Managers.

The meetings of the Society were well sustained throughout, and were of an important and interesting character, well calculated to advance the laudable objects in view.

REPORT OF THE VICE PRESIDENT OF KAUAI.

I am happy to record the generally increasing prosperity of agricultural interests on Kauai, beyond that of any previous year since this association was formed; indeed I might say, beyond that of any time since the day (which indisputable traces prove to have once existed) when this beautiful island was one vast garden, highly cultivated, that it might afford sustenance to its then redundant population. Serious evils and drawbacks indeed, the planters have had, and still have, to contend with. But the one great evil, the scarcity of labor, which caused the abandonment of some estates and menaced all with ruin, is very much modified, and except on the large sugar plantations, is hardly felt. The two importations of Chinese coolies has done much to lessen the evil, and the natives having recovered in some degree from the California fever and its effects, are more ready than before to engage at reasonable wages. The terrible drought which dried up our fields and withered our crops has been succeeded by a season of genial showers. The depression of prices in California, which last year threatened us with ruin, and seemed to take away all inducement for industry, has given place to a healthy demand, at fair prices, for our products, and though instead of these evils, an unseen enemy in the shape of an unaccountable blight, has laid waste some of our fairest fields, and the pelua has destroyed whole crops of grain, yet these lesser evils have not been general.

The Koloa plantation, under the able management of Mr. Burbank, is in a highly flourishing state. 450 acres are in cultivation, of which 260 acres were planted last season, and all is in a vigorous and healthy state. The crop now coming off is estimated at 150 tons. Mr. Burbank has had many difficulties to contend with, the present mill and works being old, small and imperfect. But a new water-wheel of the most approved construction, is on its way out, and a new mill is ready for erection as soon as the present crop is in, when the works will be in fine condition to take in the large crop now ripening.

The Lihue plantation is also thriving. The crop which is now nearly in, is estimated at one hundred and twenty-five tons, about one half what it would have been but for the unparelleled drought of last year. The sugar has all been of good quality, and will improve as the land and the cane grow older. This plantation has met with a-

severe drawback in the loss of more than one half of their last planting by a sudden blight of which a particular account will be given by me in my report as one of the committee on sugar. Their works are in admirable condition, and are to be rendered still more efficient by the addition of a second train of sugar-kettles, a steam engine of 25 horse power to run the mill through the night, (the water power being sufficient for 12 hours only) and a small engine to run the centrifugal machine. These are now on the way out, and when these additions are completed, their works will be unequalled by any now on the islands, and will manufacture sugar with a rapidity before unattempted in the Pacific. Their last year's planting was of 300 acres, and they will have put under cultivation by next August about 650 acres, besides some 60 acres cultivated off from the plantation by other parties.

These are the only sugar plantations now in cultivation on Kauai. The Chinamen's plantation at Mahaulipu, near Koloa, is in a state of ruin, owing to pecuniary embarrassments of the proprietor. The mill, a primitive wooden affair, the works and buildings are gone to decay, and the property at present has gone out of cultivation.

I am indebted to Godfrey Rhodes, Esq. for the following information of the state of agriculture at Hanalei and its vicinity.

"Mr. Titcomb's Coffee Plantation is in fine order, and he expects a large crop, of perhaps 80 to 100 M. lbs. He has lately cleared more land for planting; his plantation is compact, and well managed. I believe he is satisfied with his coolies; he has a number of natives engaged, but has difficulty in making them fulfil their agreements. Our own plantation is thriving, although a couple of years must elapse before it re-attains the prosperous state it was in in 1849 and 1850, when our natives all left us, smitten with the California fever. I am very well satisfied with the coolies, and much prefer them as laborers to the natives.

"Mr. Dudoit, at Kilauea, has a fine field of corn of about fifteen acres; he has found that it succeeds and is now going on a much larger scale; he has no coolies, and I believe experiences much annoyance from the caprices and annoyances of the natives.

"The new firm at Koolau, Messrs. Standefer & Deeren is established as a regular provision farm, and I believe is the first of the kind on the islands. They have 600 acres of land rented, and have already in cultivation 25 acres of corn, 10 acres sweet potatoes, 8 acres beans.

They have no difficulty in obtaining laborers at 25c per day; they have 12 men engaged by the year. Their crop of corn is not expected to be very large this season, as much has been destroyed by the worms. In another year they expect larger crops, and intend to enlarge their operations. Koolau is a beautiful district, and there is space sufficient for several farms there, but for extensive cultivation, I feel convinced that foreign labor is absolutely necessary."

The plantations of Mr. Titcomb and Mr. Rhodes are the only two coffee plantations in cultivation on this island; the only two, indeed, I believe on the group, in bearing. There can be little doubt but that this business, in places adapted to the coffee plant, is a most profitable as well as a most pleasant one.

There are now two plantations for the culture and manufacture of Tobacco on this island. They are both at Mana, near Waimea. One is carried on by Mr. J. R. Opitz, the other by Messrs. Archer & Gruben. The tobacco raised by them is said to be very superior, and the enterprise promises to be very successful. The tobacco is to be manufactured into cigars on the plantation.

I am indebted to Mr. Archer for the following particulars of these two plantations. Mr. Opitz has 6 acres, and Messrs. Archer & Gruben 5 acres growing, of which crop 2-3 is already housed. From the great want of rain this season on that side of the island, the tobacco crop of the natives has entirely failed. Messrs. Opitz and Archer & Gruben have probably succeeded in raising a crop by their improved method of agriculture, aided, perhaps, by the better adaptation of their soil, which is remarkably deep and rich. It is a singular fact, that during the almost unparalleled drought of the year before last, this region had more rain than during the last year, when all other parts of the island were blessed with frequent and copious showers. The crops of these two plantations have suffered from the drought, but it is encouraging to reflect that they have succeeded in raising an average crop in a season so unfavorable. These two plantations contain about 250 acres each. The crop now coming off, it is estimated, will produce about 300 M. cigars for each plantation. Neither of these gentlemen have had any experience in the raising of tobacco except what they have acquired on Kauai, and as I believe this branch of agriculture is destined to be an important one here, I would suggest that means be taken by the Society to procure for them and others who

may be about engaging in the business, such information from tobacco growing countries, as to the best method of raising and process of curing, as may be useful to them. The treatment that tobacco receives from the time the crop is housed is not thoroughly understood, and any information that the Society can obtain on the subject, would be of great value.

Since our last meeting, Thos. Brown, Esq., the hospitable proprietor of the Wailua Falls Estate, has left these islands with his family, for a residence in the United States. Their loss is deeply felt by the limited society of this island. The estate, including herd, horses, sheep, &c., was sold for the very low price of $5,000, not the cost of the mansion itself. The purchasers were Messrs. Montgomery and Turner, the latter of whom carries on the place. These gentlemen have leased some more land, and intend, I believe, to carry on the Dairy and Grazing business on a larger scale.

Mr. George Gilmore, at Koloa, has also a Dairy Farm, and has done quite a good business the year past, in supplying the unusually large fleet of whale-ships that have touched there, with firewood and recruits.

J. Dudoit, Esq. has also a large Dairy Farm at Kilauea, and has packed a large quantity of Beef for the Honolulu market.

Lieut. Reynolds, U. S. N., has leased 100 acres of beautiful land at Kapuahole, Nawiliwili, and is cultivating Indian Corn. His first crop was very successful, but his subsequent plantings have suffered much from the caterpillar and pelua, which destroyed several successive crops. He has now about 25 acres in cultivation, which is in fine condition. From what his experience teaches, he thinks it useless to plant corn earlier than May, as his plantings previous to that date have either been dwarfed or destroyed by worms.

The great want of good, or I should say of any coasting vessels has been a serious evil on Kauai the past year. Many were lost during the severe storms of the winter, most of which losses, however, were a benefit to the traveling community. The best ones have gone on foreign voyages, and there is now no regular trader between Kauai and Honolulu that can be called a safe vessel. It has only been with the utmost difficulty and loss of time that freight and passengers could find conveyance from here to Honolulu. The people of Kauai will hail with joy the success of the attempts now making to introduce steam

or Ericsson propellers between the islands, and I earnestly commend this subject to the consideration of the Society. I would suggest that a committee be chosen to examine the subject thoroughly, with a view to inviting capitalists both here and abroad to take the matter up. The committee could easily ascertain from planters, graziers, merchants and missionaries what amount of freight and passage could be *secured* at fair rates to such vessel or vessels The prospective amount which such new facilities would undoubtedly create, and the amount of native freight and passage money, which would form no inconsiderable item, could be approximated to very nearly, and it seems to me that a reliable statement, drawn up with care by a competent committee, and laid before capitalists, under the sanction of this Society, would induce them without hesitation, to take the matter up, and give us at once those means that we so much need for the proper developement of our resources, and the promotion of industry and prosperity. I believe this measure would do more than almost any other to give a sudden and permanent impulse to agricultural enterprise at these islands.

Respectfully submitted. J. F. B. MARSHALL.

REPORT OF THE COMMITTEE ON POULTRY.

Mr. President:—Your Committee on Poultry proposed to themselves to ascertain if possible,

I. The comparative value of hens for laying.
II. Their comparative value for breeding purposes.
III. The diseases of fowls, and if possible, find the best remedies.
IV. The best and cheapest food.

Mr. Metcalf, a member of the committee, has furnished me the following observations.

"My fowls are of a mongrel breed, composed of the Native, Malay and Shanghai. I have noticed that the hens which are the nearest to the pure native or Shanghai are by far the best incubators, and rear their chicks best; but where the Malay predominates they are the worst kind. They lay but indifferently, often three, four and even five in a single nest, and all persist in hatching and rearing the

chicks, a course which is sure to end in a few days after they are hatched, in a general fight, killing all the chicks or abandoning them entirely. As far as my experience goes, the pure Malay is much better for laying and breeding than when mixed, with either the native or Shanghai."

Your committee regret that nothing can be presented on the diseases to which fowls are subject, owing to the ill health of Mr. Rogers, who was to prepare that part of the report. The absence of Mr. Janion renders this report less complete than it was expected to be.

Regarding the best and cheapest food I would say that I have no experiments of my own to lay before you. It is a fact that fowls choose first and thrive best on Indian corn; but while this grain commands such high prices as it does now it cannot be fed to them. Boiled vegetables mashed up with bran or meal, are much relished.

Those who have large experience says that boiled food is the best and cheapest, especially if the fowls are kept up all the year.

One person in the United States says: "Give your hens and rooster (who by the way, requires as much, nay, more attention than the hens,) water, gravel and animal food, and they will lay as well one kind as another. Boiled potatoes, corn, wheat, rye, barley, buckwheat and anything that they eat will do."

There is a saving in boiling any kind of grain for fowls.

The Sunflower seed is said to fatten fowls better and increase the number of eggs more than any other kind of grain. Broom corn seed is as good for fowls as wheat. The seeds of melons and squashes are better given to fowls than thrown away. The native Hei or Papaw apple is good for poultry.

As fowls are somewhat carnivorous it may not be amiss to present an idea which was found in an account of a flaying establishment near Paris. A pile of scraps and refuse meat is made in the sun and partly covered with straw, in a few days the flies have deposited the germs of a different kind of animal, so that the whole becomes a living mass, which is sold for feeding poultry.

E. WHITTLESEY.

REPORT ON SUGAR, BY J. F. B. MARSHALL.

R. W. Wood, M. D.

My Dear Sir:—As I am unable to attend the meeting of the R. H. A. S., the duty will devolve on you as second on the Committee on Sugar, to fill the chair and make up the report. As the Society will in this respect be the gainers by my absence, I regret it the less, though on other accounts I should be glad to be present. I address to you the few remarks I have to make on sugar, and if you find anything worthy of being embodied in your report, please do so, and leave out all that is of no interest.

As there are but two Sugar Plantations on Kauai, and as the proprietor of the Koloa Plantation is also a member of the Committee on Sugar, and can report upon the condition of that estate more understandingly than I can, I need offer no apology for confining my remarks in connection with this subject, to the affairs of our own Plantation at Lihue.

In regard to the raising of cane we have met with many obstacles since the Plantation was commenced, some of which were owing to inexperience, and are being gradually overcome. But there are some difficulties for which no cause, and as yet no remedy has been discovered. The great evil which this year has beset us, and one to which I wish particularly to call the attention of this Society, that we may obtain if possible, some information on the subject, is a severe blight which has destroyed more than half our last year's planting and seriously injures the whole. Our cane field of 240 acres, was planted between the 1st of June and the middle of August, and up to the last of October, was the finest looking field of cane I had ever seen, and the rapidity of its growth was surprising. You may judge of this by the fact that a part of the field planted about the 15th of June had tasseled on the 15th of November, and the canes were larger than the average of our crop the previous year. Soon after a long southerly storm in October, the field began to droop and the leaves to turn yellow, both of the newly planted cane, and the ratoons which had sprung up from that which was taken of the previous years planting for seed. The blight commenced through the centre of the two fields, and slowly spread itself over the whole, till the fields which in September looked green and flourishing, appeared as though a fire had passed over it. Not till April did any of the fields show

that they were recovering, but the largest portion is entirely dead. I have sought in vain for the cause of this fatal blight. The books that I have consulted throw no light upon the subject, and it is singular that of those books which I have seen on the culture of cane, Porter, Evans, Scoffern and Wray, hardly a word is said about the *diseases* of the plant. Porter speaks of a blight caused by minute insects, but by the closest examination by a miscroscope, I can discover no signs of any insects other than those found on the most healthy canes. The cane in the hollows and small ravines, which is generally the most vigorous, was most fatally affected, and in some places, where the field was but little injured, the cane in the hollows of the field would be entirely killed. The cane fields of Mr. Charman on another part of the plantation, and that of Mr. Pease, adjoining, did not seem at all affected at first, but since ours has begun to recover, (that I mean which is not dead,) their fields have become affected, and are now looking very badly. I am completely baffled in my attempts to find out the cause of this destructive disease or to apply a remedy; and if any of the planters from the other islands can throw any light on the matter I should be much pleased to gain some information on this subject. The cane was not planted too early, for that which was last planted was equally affected with the first. Neither was it because of too shallow planting, as cane planted in furrows made by the "monster ploughs" was also affected. It was not from drought as we had sufficient rain and the cane in the moist ravines was more diseased than the rest. I should have thought it might have been from close planting, but cane that was not close planted was equally affected. I have exhausted my ingenuity in conjectures as to the cause of this mysterious disease, in vain.— The only supposition which seems not to be *contradicted* by any of the circumstances, is that the growth of the cane planted in a rich soil, and brought forward with such rapidity by the favorable weather, was too fast for its strength; and that some poisonous substance was brought on the southerly gale, which its tender stalks were unable to resist. But the cane at Koloa did not suffer from this southerly wind; for which I can only account by the fact that southerly storms are always more severely felt with us than at Koloa, the wind gathering force on the hills south of Puna, as the trades gather strength at the Pali to sweep down the Nuuanu valley.

I think June is too early to plant cane; July is the best month.—Our cane is planted in drills four feet apart, which I am convinced is too close, and that cane should be at least six feet apart.

We have experienced difficulty in the manufacture of sugar, on account of the large proportion of molasses. We have tried in vain to lessen the quantity, by various experiments. We have made over eight barrels of molasses to one ton of sugar; this may be partly from inexperience, none of our hands in the mill ever having had any previous experience in the business, but more I think from the nature of the cane. We commenced our planting with wild cane taken from the ravines, and I presume it will require several years cultivation to make the yield equal to that of older plantations.

I believe the best packages for sugar to be half barrels, if they can be placed here at a low rate of freight. They are more expensive than bags, but taking into consideration the loss by rats, and the risk of shipping in leaky vessels and boating through the serf, the half barrels come nearly as cheap in the end, and are a much more saleable package. Most of our present crop has been packed in half barrels and the rest in native mat bags of 25 pounds each. The bags are made square and sewed up, which makes a much neater package than the ordinary woven round bottom mats.

We find Coolies answer much better in the mill and boiling house than the natives, they are quick to learn, careful and attentive.

All our sugar (except five or six tons) has been drained by the centrifugal separator, which we consider invaluable on a sugar plantation. Ours is run by water power at present, but we have a small steam engine of five horse power, on the way out for this purpose, as it is better to have the power disconnected from that which drives the rollers. A Chinaman has charge of the machine and manages it with skill and efficiency.

The scarcity of labor is still our greatest difficulty, and I trust measures will be taken at the present meeting to import a further supply of Coolies.

Respectfully Yours,

J. F. B. MARSHALL.

REPORT OF THE COMMITTEE ON HORTICULTURE.

The committee of your Society, to whom is delegated the task of reporting the doings of our community in the department of Horticulture since our last meeting, find it no easy task to discover any facts on which to base this report, for there is in fact, with few exceptions, almost nothing in the shape of a garden amongst us. It is to me at least a source of sincere regret that that pursuit, of all others the most pure and invigorating, should be so utterly neglected as it unfortunately is, on this island at least, and when I draw on my own experience which testifies to the pleasures of the delightful pursuit, my surprise is equal to my deep regret. There is not in the whole range of our various pursuits and occupations, one fancy, one vocation, so unalloyed, in all its delightful and fascinating phases, as the cultivation of a garden. All the enjoyment and gratifications afforded by all other pursuits are to be found in practical horticulture, and still a balance in its favor over them all combined. The florist unites in his collection of flowers, as many fancies as would occupy a large proportion of the community, and extracts gratification and pleasure from each and all of them. The fortunate possessor of one of the invaluable works of the old masters does not rejoice over his Reubens, Rafael or Paul Potter, with more ecstacy than does the florist over his Tulip or Carnation bed, nor does the owner of a superb picture gallery more proudly point to his choicest gems of art than does the florist his choice flower beds. The Conchologist may boast of his choice collection of rare and beautiful shells, perhaps excelling in variety and rarity, those of all his neighbors, but he is compelled to see them in their wondrous sameness—there they lie, an inanimate mass without change or variety; and how few persons are competent to judge of or derive gratification from them. Whilst the flower garden is one constant scene of variety, every succeeding morning developing some new beauty, in the freshly expanded petals of some charming and fragrant flower; the musty antiquarian sits in his gloomy and solitary chamber, poring over his collection of ancient coins and other melancholy relics of past ages from which no ingenuity can extract one cheering idea. His greatest pleasure is in the narrow and contracted idea that he is the sole possessor of some old relic, of little

value, in itself for any intrinsic merit, and if another should be found, his hoarded treasure at once loses its fictitious value. He cannot, if the very nature of his occupation would permit, give a seed or a cutting to a fellow admirer; whilst the florist can share his pleasure with a friend, and still have his treasure undiminished. The miser does not more value his hoarded treasure than does the gardener his choice fruits, flowers and vegetables. The lover of a garden is a collector and propagator of new and never-changing delights. The intense anxiety with which he watches the first indication of the germination of a new or choice seed and the progress of the young plant to maturity, in the opening of the first flower, is a pleasurable sensation unknown to other pursuits, and if the newly developed blossom should surpass in beauty or fragrance his previous collection, his hopes are consummated and his pleasure complete. The horticulturist does not visit his collection to find them precisely as they presented themselves on his previous visit. He finds something new every day; whilst the possessor of a picture, valuable coin, or even a collection of natural history, is doomed to view them constantly in precisely the same aspect, without variety. The gardener is amply repaid for all toil and exertion, by his fruits, flowers and vegetables, and he is not obliged to search for a connoisseur to share his pleasures, as everybody can appreciate the delight of a flower and fruit garden. Another advantage which a horticulturist possesses over all other pursuits, is, that it is within the reach of all—the humblest cottager can cultivate his little patch—the citizen can have his blooming flower pots as easily as the Peer can rejoice on his Chatsworth or Eaton Hall.

The absorbing pleasures of a garden offer a natural and readily appreciated attraction to the young, and I am convinced from much experience, that no other pursuit will operate so favorably on the youthful mind, as the culture of flowers. Nature has emplanted in every infant an innate love of flowers, and it is the bounden duty of all who are entrusted with the responsible duty of educating and developing the infant faculties, taste and propensities, to guide and direct them to such pursuits as are most likely to refine and improve them. What other pursuit, I would ask, is so entirely guileless and unalloyed

and what is there in the whole range of creation so perfectly in harmony with the untainted and pure mind of the child fresh from the hand of its Creator, as the enjoyment of his most charming as it is his purest handiwork; as displayed in a flower garden. Teach them, the child to till and cultivate flowers—they will assuredly win their own way to its affections, and you lay the foundation of a love for the sweetest and purest of all earthly pursuits, which in after life, when the allurements of the wicked world are gathered around him, will win him from and shelter him against their dangerous blandishments. I can say with perfect truth, that the happiest hours I have ever spent in a long and chequered life have been in the society of my flower garden, and it has this additional advantage that while many of the gaieties and pleasures which fascinate us in early life, cease to please in the decline of life, the flower garden loses not one jot of its fascination, to our latest hour.

Is is not then, sincerely to be regretted, that more attention is not devoted to this charming pursuit?

A few of our fair friends, are, I am happy to say, distinguished exceptions, and the beautiful boquets which adorn our show-room, containing choice collections of charming flowers, attest that this culture is duly appreciated by some at least amongst us. Would that I could persuade many more to follow so good and excellent an example.

I am not aware that much progress has been made since our last meeting in the introduction or cultivation of new fruits or vegetables. The difficulty of transporting fresh seeds to this place has ever been a great impediment. In California garden seeds have been raised of late with much success, but such enormous prices are asked for them there, that most people are deterred from purchasing. Eight dollars per pound for turnip seed which I have paid lately, is a great obstacle to their extensive culture. Many parcels of seeds have been forwarded to me from Australia in the last nine months, not one of which has reached me, and as few vegetable seeds can be matured here, our stock I regret to say still continues meagre and limited. I hear with much pleasure that Mr. Rice & Co. are expecting a collection in the "Matanzas," now daily looked for, and I trust they may

arrive fresh and in good condition. The same ship also brings two swarms of bees, one of which packed in ice, will probably reach us in safety. The able report of our President enters so fully into the subject of fruit trees that it is unnecessary for me to dilate on it. If we shall succeed in securing a good supply of fresh vegetable seeds, I trust that next year's exhibition will be more attractive in this not unimportant department.

JOHN MONTGOMERY.

REPORT ON COFFEE.

Mr. Chairman.—The very dogmatical manner in which, last year, my theories respecting the cultivation of the coffee tree were demolished by a professional hand, might deter me from attempting a reply to criticisms emanating from so high an authority.

I allude to observations made in an essay "on the promotion and eradication of worms," by Mr. Duncan, read before the last meeting of the Association; but while fully admitting the justice of many of the remarks, and bowing to the superior knowledge of the gentleman in all that relates to scientific horticulture, I think that some of his principles are wholly inapplicable to cultivation on an extensive scale, and I find besides that he has misunderstood some of the directions I gave in the paper read before this Society in 1851.

I can testify as to one of the theories laid down by the gentleman, viz: that most important one, the destruction of insects by means of high cultivation. Although the fact does not bear directly on the subject which it is my intention to discuss, I may mention that when I commenced planting the land I now occupy, it was almost impossible to grow any description of vegetables. Our operations in sowing and planting were several times repeated before they were successful; entire nurseries of young plants were destroyed in a single night; even the young coffee plants whose stems are very tough did not escape, but were devoured like other and more tender productions.—After some time I discovered that by frequently working the land,

turning it over, and exposing the under surface to the action of the light and atmosphere, all vermin were either destroyed or dislodged, so that the whole of our land which has been for any space of time under cultivation, I believe to be now quite clear of them. During the earlier years of our occupancy of the land, the swarms of caterpillers that used periodically to make their appearance were innumerable; on some occasions they so completely covered large tracts of land that it was impossible to walk without crushing numbers at each step; they destroyed every vegetable before them; but for some time past have completely disappeared. Our present immunity from their ravages is in my opinion entirely attributable to the cultivation of the land.

If the repeated transplantation recommended for the coffee tree by Mr. Duncan has been successfully practiced on fruit trees elsewhere, I have no doubt it may be advantageously adopted here; the increased value which the operation would give the young plant would certainly warrant a trial of the experiment. The small additional outlay attendant upon the transplanting of a few nurseries in the formation of a coffee plantation would be very insignificant as compared with the advantages that would accrue from the successful practice of the system. I differ entirely however, from Mr. Duncan, as to the time of finally removing the young plant. A coffee tree should in my opinion be at least a twelvemonth old before the last operation of transplanting takes place, as it would at that age be larger and stronger and less apt to sustain injury in the field by careless hoeing than if it were planted out at the earlier age of eighteen or twenty weeks, as recommended by Mr. Duncan. If the repeated removals however, should develope the fibrous roots to such an extent as to render the small space it occupied in the nursery, insufficient for its support during the whole of that time, it should undoubtedly be planted out in the earlier period. I have every reason to believe that the attempt to form a plantation from cuttings would fail. I have tried numbers of cuttings, but have never in any one case succeeded in obtaining a tree from them; they have invariably died without vegetating. On one and only one occasion have I heard of a cutting having taken root; that was during a very wet season. My impression is

that in ordinary seasons not one in a hundred would grow. I therefore feel persuaded that Mr. Duncan must be mistaken in saying that the Brazil plantations are formed from cuttings. I should rather suppose they are formed by drawing wild or waste plants, trimming off their roots and planting them in the manner I described in 1851, which Mr. Duncan appears to have misunderstood. The coffee tree does not send up suckers, its nearest approach to the sucker is a shoot or number of shoots, which when the tree is topped, or any of the primary branches are destroyed, spring from the stem of the tree just below the junction of the primary branches. If cut off and planted they would not grow. I merely designated the plants I was describing as suckers in my ignorance of any more appropriate name for them. Mr. Duncan says the tree should be dwarfed by the roots; possibly that might be done on a small scale if our laborers, or even the managers of plantations were skillful gardeners, but in the present state of agricultural knowledge on these islands I consider the plan impracticable; even had we science sufficient, the labor required on a large plantation would be too great to admit of the systems being throughly carried out, and if practicable I doubt whether it would be expedient. The coffee tree, in my opinion, should be made to cover as much ground as possible. If the tree is to be dwarfed by destroying the roots, a handsome and symmetrical little plant may, by very skillful management possibly be obtained, but its crops will be reduced in proportion to its dwarfing; and I very much doubt whether by the harsh process to which it is subjected, its productive powers will not be irreparably injured—should the operation be unskilfully performed the tree will be ruined.

Mr. Duncan condemns the practice of extirpating gormandizers by the knife, but does not say in what manner they should be got rid of. The gormandizer is essentially a spurious production, an excrescence, different in its qualities from the natural and healthy branches, and unless it can be prevented from making its appearance by high cultivation, I know of no means other than the knife for its eradication.

It is to be regretted that well qualified as Mr. Duncan is to give information on agricultural subjects, we have not still the benefit of his skill and science. His instructions modified to a certain

extent to allow for difference of climate and other circumstances, might be successfully acted upon, and prove at once profitable to proprietors and beneficial to the community.

G. RHODES.

REPORT ON AGRICULTURAL IMPLEMENTS.

In the culture of the soil, in all countries, the implements used should be an object of the first importance; and in fact the state and progress of agriculture among a people may ordinarily be judged of by inspecting the implements they use and the manner of their using them.

In these islands the subject of implements is the more important from the fact that they are mostly imported at great expense, consequently they come high to the planter, and should therefore be of the best kind, so as to accomplish the greatest amount of work with the least expense.

The price of labor on the islands is confessedly high and one object of the planter in procuring his implements is to save labor.

The islanders have always been an agricultural people, and yet taking the population generally, they have made but little progress in improved methods of cultivating the soil, or in the instruments used for this purpose. Until the introduction of foreign commerce the only implements used by the natives was a hard stick of wood sharpened at one end, the same doubtless that we read of, in the history of the agriculture of other nations in their primitive state. When iron was introduced, a piece of it about a foot long, with a socket at one end for a handle, and flattened and rounded at the other, was fixed on the end of the old fashioned *oo* and was a great improvement. A greater still was to fasten about a foot of the sharp end of the whaleman's spade on a straight stick which is of the best steel.

This same oo, or the straight stick with the piece of sharpened iron on the end of it, is still the great and only implement of nine-tenths of the cultivators of the soil on these islands. No wonder our progress as a people in this branch of industry has been slow, and the amount

of production small. The natives are much attached to this rude and simple instrument, and usually prefer it to the hoe, spade or shovel, unless they have learned from foreigners to prefer the latter. They use the oo with surprising skill and effect, but it is a hard implement on the back and knees, the body while at work being in an almost sitting posture, and the arms are not in a position to put forth their full strength. The back soon begins to ache, the knees give way and after three or four hour's work the laborer when left to his own choice returns to his hut for repose. Hence all native agriculture is on a small scale and the results small. It cannot be otherwise until they learn to use implements more efficient, expeditious, and less severe upon the muscles, as some have already done with good success; and were it not that foreign implements are so expensive they would be much more generally adopted. To render them less so should be one important object of this Society.

Among foreign planters on these islands the implements used are such as are common in Europe and the United States. The plough, harrow, the cultivator, the hoe, the spade, the shovel, the rake, together with the usual complement of carts, yokes, chains, horse gear, scythes, &c., are common, and generally are of a good quality, being the latest improvements of their kind. A one horse power engine together with a grain thresher and separator of the chaff, has lately been introduced by one of the wheat growers of Maui, and has already been of essential service there. By the use of two horses and the labor of one man and two boys, 50 or 60 bushels of wheat can be threshed out, cleaned and put in the bags in a day, thus saving a great deal of time and labor, enough to pay for the whole machine in a short time. A field reaper is said to be on its way to the islands, which will be another important improvement, as it will save time and labor and thus enable wheat growers to produce that valuable grain at much less cost than could be done without these improvements.

In regard to the other important implements we propose to make a few observations.

The Plough.—This is the farmer's right arm; with it he begins to break the soil, and without it he can do nothing. Upon his success in using it will depend very much the success of his crop. Bad ploughing is a sure indication of bad farming; and in order to secure good ploughing a good implement must be procured.

From the best information we have been able to obtain, the long English iron plough and Eagle ploughs of various sizes answer the best purpose for our planters. The former is generally preferred on sugar plantations. Its chief advantages lie in its great strength and durability.

The oxen on the plantations are generally badly trained, and hence ploughs especially in breaking up, are apt to be broken if it is possible to break them. The English iron plough will bend and then it can be straightened out and made as good as ever, while the Eagle plough, having a beam and handles of wood may be broken, and from the expensiveness of work, the want of skill and of suitable timber, is not so easily repaired. The English iron plough being very long and low is more easily held by the ploughman than the Eagle plough. It has wrought iron points which are not easily broken, and when in good order cuts a deep wide and true furrow. Still there is a difference of opinion as to which is preferable. It is admitted that the Eagle plough in the hands of a good ploughman answers about as well as any other. In fact, here as in other countries, the same plough does not answer equally well in all places. Ordinarily, the plough that is best adapted to the rough and awkward usage of the native ploughman and badly trained cattle, will answer the best purpose among our planters. Care should be taken to have on hand a supply of extra points and other parts, so that if any part give way no time may be lost in replacing it. The great defect in our imported ploughs for ordinary purposes is their being too light. Experience teaches the necessity of stirring the ground deep and thoroughly, and the ploughs in use do not, it is said, take a furrow sufficiently deep; nor will they bear a draught sufficiently heavy, for the stiff compact soil of some sugar plantations, although they answer well in localities like Makawao and Ulupalakua, Maui, where the soil is rather loose and mellow. It is thought therefore, that a larger size of the English iron, or Eagle plough, than those now in use, would be an advantage.

Another plough of great importance is in use on the sugar plantations of Kauai. It is made mostly of wood, double mould board, and of great size and strength, requiring from 8 to 12 yoke of oxen to draw it. It may be called a drill plough as it is used for opening drills for planting sugar cane. The roots of the cane run shallow in the ground, and are apt to suffer from the drought unless planted very

deep. Hence a drill or furrow is opened by this mammoth plough of some 15 or 20 inches deep, in which the seed cane is planted, and as the cane grows, the adjacent soil is gradually thrown in about the roots and they are kept well under ground. This mode of planting is said to be very successful and the planters say they could not dispense with this important implement. It answers moreover the purpose of a subsoil plough by throwing the earth below on top, where it is exposed to the air and sun, and becomes good mould.

Thus the fertility of the soil is improved. If we are correctly informed, this plough is the invention of Mr. Burbank, of Koloa plantation.

The harrows which are imported are said to be liable to the same objection as the ploughs; that is, they are too light in certain plantations like those on Kauai, and consequently do not sufficiently pulverize the soil. Hence the best harrows in use are those which are made on the islands, usually on the plantations. They are very heavy, have strong teeth and require three or four yoke of oxen to draw them. The heavy draught is no objection where oxen are so abundant and cheap. To get the ground well and deeply stirred before planting is the great matter, and to do this a heavy harrow is a most effectual implement and it is particularly necessary when the ground is new and hard.

The Cultivator comes next in order. It is in general use among planters on the islands, but the general complaint is that those imported are both too light and lack that supply of different formed teeth and scarifiers that are common in other countries.

The Cultivator is a great labor saving machine and is of immense importance for running between the rows of cane, coffee and other crops, not only for the purpose of stirring the soil, but of cutting up the grass and weeds. They should be made to contract and expand to the width of the rows, and be furnished with various forms of teeth, to be shifted as occasion may require, some narrow teeth to stir the soil, others broad and flat to cut up the weeds, and others again in the form of a double mould board for mixing manure in the soil and pulverizing it.

The Cultivator may be used to great advantage by our wheat growers either for covering the grain when sown broadcast or for opening drills for it as the case may be. The soil in our wheat growing re-

gions is usually loose and mellow after plouging and the cultivator is well adapted to such.

The universal cultivator mentioned in some of our catalogues of agricultural implements might be introduced here with advantage. It is said to be strong and durable and does its work more thoroughly than the ordinary kind.

THE HOE.—The hoe is another important implement to our planters, and a considerable variety have been introduced. The common garden hoe is too feeble, and the large West India hoe is too heavy for the cane and coffee plantations.

The hoe best adapted to the islands is that which combines the greatest amount of strength with lightness, and which has a large eye. The wood of the islands best adapted for handles is more brittle than oak or hickory: native laborers too are apt to break handles of any kind, hence the hoe should have a large eye to receive a large handle. The wood most commonly used for handles is the *hau*, which is lightest and sufficiently strong. The kind of hoe generally preferred on the plantations is made of steel, of the ordinary size, not quite so heavy, nor so broad as the common garden hoe; but of better material and more easily kept sharp. It has a large eye.

CARTS.—A variety of carts are in use on the islands, mostly imported; some with iron axles, others of wood. But we believe as a general thing our planters find it more to their advantage to have their carts made here and mostly on their plantations, than to import them. A stronger article is needed generally than those imported, owing in part to bad roads, and in part to the fact that ox power is abundant, and the drivers unskillful and careless. Hence the planter seeks for strength mainly in constructing this important implement. Native timber answers well for the fellies of cart wheels, for the hubs also and some other of its parts, but oak is needed for the spokes, tongue and axle.

THE CORN SHELLER.—This is an implement much needed, and we believe it has been introduced on the islands with good success. Corn growing is becoming more fashionable, as well as more profitable than it used to be, but considering the price of native labor the shelling of the corn by hand is expensive and tedious, but the corn shellers mentioned in the catalogue of implements should be introduced extensively or manufactured, by which one hand will shell 100 bushels a day which

would be a great advantage. In fact every labor saving implement where labor is so high should be looked upon with favor and a trial made at least to introduce it.

There is also a great want of mills for grinding corn on the islands. Here and there a hand mill is in use and they are found very convenient. But it is a matter of regret that they are so scarce, and imported corn meal, not the most sweet and good, is used, while an abundance of that which is new and fresh might be manufactured here and at a lower price.

THE THERMOMETER CHURN.—This implement is spoken highly of in works on agriculture and might be introduced here with advantage. It is made of wood and metal combined, is worked by a crank and is so constructed, that the milk or cream by pouring warm water into a cavity adjacent to it may be brought to the required temperature, and the operation of churning is thus greatly facilitated. This is a labor saving machine. It is called a thermometer churn because a thermometer is attached to it to indicate when the milk or cream has risen to the right temperature. The cylindrical churn is also highly approved, and those in the dairy business might do well to try one or both of these as they cost in the United States only $3 or $4.

The expense of agricultural implements has long been a matter of regret, and a heavy drawback upon our agriculture. They are confessedly very expensive, and the grand reason is that the freight is so high, more in some instances than the original cost.

How this evil is to be remedied is the question. An agricultural warehouse under the direction of this Society has been spoken of and advocated by some. But this would involve an investment of capital which the Society does not possess; otherwise no reason appears why it might not be done. But the small amount the Society does expend in premiums might perhaps be more advantageously expended in importing new and improved implements of husbandry, than in medals, cups, &c. We merely make the suggestion.

One principal cause of the high price of implements has been the freight, and this is owing to their taking up so much room on board the ship. Would it not be economy to order them in pieces, boxed up and so marked that there would be little difficulty in putting them together here? Ploughs, harrows, cultivators, materials for carts and wheelbarrows, for instance, all of which occupy much room if imported in

quantities, can be packed in this way as some we believe have been, in order, to reduce their bulk and considerable freight be thus saved.

The foregoing remarks we are aware go no deeper than the surface of the subject, but in our want of information and lack of experience on the subject of implements they are the best we have to offer, and they are presented rather as an evidence of our good will towards the cause in which the Society is engaged than for their intrinsic or practical value.

Respectfully submitted. R. ARMSTRONG,
Chairman of Committee.

REPORT OF THE COMMITTEE ON HORSES.

The Committee on improvement of the breed of Horses have to report some advance during the past year.

A horse and mare, for breeding purposes, imported from Sydney in His Majesty's Yacht the Harriet, are said to have been sold for eight hundred dollars each. They are of a brown color, about 16 hands high, of rather a light frame, and said to be from the English breed of race horses; but the committee are not aware that any trial of their speed has been made.

A bay mare imported from San Francisco by Mr. Alex. J. Cartwright, Jr., and valued at six hundred dollars is of an American stock, carrying herself finely in the harness.

Two mares imported by Mr. Foley from San Francisco and belonging to his circus are also destined for breeding. One is black, the other a light chestnut. Both are well formed animals, small and high spirited.

We have now on the island of Oahu three black horses, stallions, derived, as we suppose, more or less remotely from the Andalusian breed of Old Spain. They were imported from Valparaiso. A number of colts from one of these were sold at auction during the year, at prices ranging one hundred per cent higher than others of the common stock which were sold at the same time. This stock are usually black or iron gray.

We have also the stock of Admiral, a finely formed bay horse imported from Sydney. They are not yet numerous enough or old enough to enable the committee to say more than that there is every reason to expect from this source an improvement in agility and beauty of form. The bay is every where a favorite color.

Some colts of the breed of Oregon, a fine chesnut, have proved of a large size, well formed and active. One was sold during the year at three hundred dollars, another at one year old for two hundred and fifty dollars, and another at two weeks old to follow the ownership of the mother, was sold at ninety-five dollars. These prices, unprecedented, we believe, in these islands, show how great an improvement is expected to be made in our breed of horses from this importation of a foreign stock.

Good pacing horses are justly esteemed among us for their easy gait and powers of endurance, yet we believe this is a gait almost or quite unknown among the high bred horses in Europe and America. From ancient sculptures and paintings we are led to suppose that the Egyptians, Greeks and Romans were unacquainted with the trotting horse, for we find their delineations of the horse, represent him either upon the gallop or with both legs of the same side raised from the ground. It may be that the square trot is an artificial gait, from which, when neglected, the animal returns by slow degrees to the regular "side at a time" pace of the ancients, and the fact which your committee have verified, that although horses were introduced into these islands fifty years ago, the first pacers appeared within the past fifteen years, and are now very common and increasing in all parts, especially where the breed is most deteriorated, seems to give credence to the idea that a pacer is somewhat of an ignoble animal.

The history of the several importations of horses and of their increase throughout the islands would be interesting, but the want of records renders the collection of facts a difficult task, which the committee have not found time fully to perform. We believe the first horses were brought to the islands in 1802 by Capt. Shaler, in the Lilly Bird, who presented them to Kamehameha I. Capt. John Meek, Jr. imported a gray mare in 1822, and about the same time a mare of English breed was imported by the Rev. Mr. Ellis, Missionary from Tahiti. She was purchased by Laanui, and her stock are well known as the best in Waialua. Horses were taken to Waimea, on Hawaii,

in 1830 for cattle hunting, where they were left to breed, and thrive well. Among them were the progeny of Kalakini, a dappled gray, and another California horse imported by French & Pelly of similar color. To this last may be ascribed the deep chest and high fore quarters of some good Waimea horses. On Kauai, horses were first introduced as a present to King Kaumualii, after which the then fashionable calicoes were introduced by Governor Kaikeioewa. The Kauai horses are now very numerous and greatly degenerated.

The committee have taken particular notice of the qualities, of tameness and docility natural to all the progeny derived from imported stock, when compared with the young of our native horses; and as these qualities are combined with life and spirit they are regarded as highly important to the islands, especially as the horse is beginning to be more frequently used for draught. Improvements in the breed of horses must necessarily be slow. It is a work of time —of years— to decide upon the best crosses for the improvement of a breed of horses, which like that of these islands, has vastly deteriorated by neglect, bad management and hard usage. Besides, since most men are, or fancy themselves to be good judges of horse flesh, and since there are some who are apt to take offense when their knowledge is called in question, or their opinions doubted, it does not become your committee to express any decided preferences of their own, on this occasion.

Your committee notice with pain the continuance of the barbarous custom of training young horses, *breaking in*, as it is called, which has been taught here by people from Mexico and California. The first lesson is a lasso thrown over his neck, upon which the frightened animal pulls until he is strangled and falls down, or is thrown down by means of another lasso around his fore legs. The colt is then haltered, blind-folded and backed by a rider who frequently ties himself on to keep his seat. Sometimes he uses a heavy Spanish saddle from the first, and he always is armed at the heels with cruel spurs which are used most unsparingly. The colt exerts himself to the utmost either by running or attempting to unseat his rider, until his strength is exhausted, and by degrees he comes to submit to this hard usage quietly. But it is always at the expense of his vital energies to so great a degree that six months of rest in the pasture are often

required to restore his flesh, while the injury to his limbs and wind remain with him for life.

How different this from the practice in England and the United States of America. The Turks and Arabs excel perhaps all other people in the art of cultivating a good understanding with their horses. An English Ambassador at Constantinople two hundred years ago, wrote as follows: "There is no creature so gentle as a Turkish horse, more respectful to his master or the groom that dresses him.—The reason is because they treat their horses with lenity. I myself saw in Pontus, passing through a part of Bithinia called Axilos, towards Cappadocia, how indulgent the countrymen were to young colts, and how kindly they used them soon after they were foaled.—They would stroke them, bring them into their houses, and almost to their tables, and use them even like children. They hung something like a jewel about their necks, and a garter, which was full of amulets against poisons, which they are most afraid of. The grooms that dress them are as indulgent as their masters. They frequently sleek them down with their hands, and never use a cudgel to bang their sides, but in cases of necessity. This makes their horses great lovers of mankind, and they are so far from kicking, wincing or growing untractable by this gentle usage that you will hardly find a masterless horse among them."

"The Turks love to have their horses so gentle, that, on the word of command they may fall on their knees, and in this position receive their riders. They will take up a staff or club upon the road with their teeth, which their rider has let fall, and hold it up to him again; and when they are perfect in this lesson, then, for credit, they have rings of silver hung on their nostrils as a badge of honor and good dicipline."

The committee would be happy if the attention of Graziers was more thoroughly awakened to the importance of a radical change in the manner of training young horses, believing it would greatly aid in improving the qualities of the animal. But until grazing lands are properly enclosed it is not easy to check the tendency to run wild particularly among large herds.

The existing laws, for the regulation of fences, grounds, trespass

and damages, are so extremely defective as to be as liable to work evil as good to the interests designed to be protected. It is not easy to find any one so well acquainted with the condition of both the agricultural and grazing interests of these islands as to be able to frame a law which would work equal justice to all. The committee believe that the practical knowledge of the Agricultural Society might be made available in some way for the advantage of our Legislators, by means of reports, or discussions, or by the labors of a suitable committee appointed to frame an Act, upon this subject, to be submitted to the next Legislature.

Your committee take the liberty of remarking, although with some diffidence, that in their opinion the premiums offered for horses, are by no means equal to the importance of the animal, even in an agricultural point of view, when compared with other objects for which premiums are awarded. The exhibitor is to receive only a *certificate* by way of encouragement for bringing forward his colt or filly which he has raised with much care and expense, or his team of horses which he has trained to the plough, provided they are the best offered, while the lucky exhibitor of the best six fowls is to receive a *silver medal.* The committee, knowing that such a distribution of prizes is considered unjust, have reason to fear that some of the best animals will not be brought forward at this fair, and they hope the Committee on Premiums will hereafter, give a little more encouragement to this department of agriculture.

G. P. JUDD.

REPORT OF THE COMMITTEE ON SWINE.

Mr. President and Gentlemen of the H. H. Agricultural Society:

As it has pleased you to appoint me Chairman of the Committee on Swine, I shall therefore do my best to develope my limited experience and opinion concerning this subject, as it affords a large source of profit, as well as comfort to the farming community at large, and as I now conceive, the correct light for us to look at this question is, at

the present time, in a commercial point of view at leas; that we want to arrive at, if possible, the most efficient method of producing the largest amount of good pork at the least possible expense, so as to enable us to export this article of commerce in every shape, and not to be obliged to import such a large amount as is brought into this country annually from a foreign market. And I cannot see any just reason why this theory should not be worked out eventually, in practice, provided that the necessary provisions are taken in the first outset, in procuring a suitable location, and proper attention is paid to the stocking it with the best of foreign breeds, that possess the requisite capabilities for accumulating the best pork on the smallest amount of food; and that this kind of hog can be produced by a cross of breed with the American and Chinese, as the latter are good feeders and noted for its fineness of flesh, the former being also noted for its bulk as well as its great facilities in fattening on a small amount of provender.

Concerning location, I would advise those interested in this matter to allow their hogs to run at large, and if possible that run to comprise a ravine that abounds with wild apples, guavas, &c., as those fruits afford food for hogs one half the year at least, and as security against the swine going wild, accustom them to be herded at the sound of a horn, and entice them into a pen every night, by dealing out some luscious kind of food, such as sour milk, corn, &c., &c., by this means I think that the largest amount of pork can be raised at the smallest amount of expenditure, consequently we arrive at just what we want, at the least amount of trouble.

There are of course several other methods of raising and fattening pork, in which location, opinions, &c., &c., depend, all of which I presume this agricultural community are well aware, for any man that knows what a hog is, knows what to feed him on, consequently I consider it useless to dwell on this subject any further, than to refer those that are wishful of obtaining much more practical information on this subject, than I am capable of giving them at the present time, to that most excellent work, now in the hands of our Librarian, the second volume of the Farmer's Library on Animal Economy, and to

conclude with a proposition that this Society should form a committee on the subject of curing pork, hams and bacon, and offer a premium for the best article.

Respectfully submitted by

ROBERT JAMES HOLLINGSWORTH.

REPORT OF THE COMMITTEE ON FENCING.

To R. G. Davis, Esq., Chairman of the Committee on Fencing:

DEAR SIR:—Allow me to mention my experience with wire fencing. I find that wire placed 6 inches apart, with the posts 8 feet distant, is not sufficient to keep in sheep and hogs, for although you may tighten the wire all that it can possibly bear, it will stretch and yield to the pressure of small animals that can get their heads through; to obviate this difficulty, I propose placing two pickets, pependicularly, in the intermediate space from post to post, and running the wire through them, so as to shorten the distance of expansion, thereby only having 2 feet 9 inches to expand in the place of eight feet; by this process I think that wire fencing can be made to keep out sheep and large hogs, at a small additional outlay, as a four post picket merely requires to be sharpened and drove a foot into the ground, thereby having 3 feet above ground, and that is high enough to prevent sheep, &c., standing on the ground to force their way through.

Respectfully submitted by

ROBERT JAMES HOLLINGSWORTH.

To the Chairman of the Committee on Fences:

DEAR SIR:—At the present time nothing so much impedes the march of agriculture at these islands as the want of fences, a want which ought not, and need not to exist any longer.

Were there insuperable obstacles in the way of constructing good fences to any desirable extent, less might be said on the subject, for a bad case is best managed by silence. But such obstacles do not seem to exist except in imagination. True we have no boundless forests to

supply us timber for fencing, nor do we need them. A wooden fence is always expensive, and in this country would often be destroyed by fires. It is also a serious objection to a wooden fence that "it commences decaying the moment it is made," and it rapidly decays. Nor is it certain that wire fences will be much better, as without great care they will rust rapidly, and unless made much heavier than strength requires while they are new, they will soon be rendered useless.

We want a fence which will all the while be growing stronger; in fact, which will "grow while we are asleep." There is no longer a doubt that such can be made in most places throughout these islands. But at the same time it must be acknowledged that it is an outgo—it costs money—or at least labor, and does not of itself yield an income. It must also be acknowledged, that the predilections of many of us, consequent on long habit, are in favor of a good stone fence, and where stones are plenty, it is, no doubt, the readiest and best way of fencing. But it is expensive—more so than most are ready to adopt at the outset.

For this country the cheapest, most desirable, and at the same time most effectual of all practical fences is a living hedge. And, if we except the most arid parts, no country perhaps offers greater facilities for growing it.

As a general thing the less arid parts of the islands may be classed under two heads in regard to hedges, viz: those parts where the prickly pear will flourish, and those where from too much rain, or too great altitude, it will not grow well. For the latter situations there are a variety of shrubs or trees which no doubt would make good hedges. Among the rest we hope much from the Osage Orange. But where the prickly pear will grow well, it is, no doubt much preferable to any plant now in the country. In small enclosures, and the vicinity of dwellings it would be found too troublesome, and would take up too much room, but for large enclosures and general fencing it could not be surpassed.

The best season for planting a prickly pear hedge is just before it throws out its leaves, which it does annually in May or June. At that time the leaves are filled with juice from the winter rains and will

speedily take root. They however, require careful handling at this time to prevent much bruising and breaking, else they will rot—a hint which may put to rest the apprehensions of those who greatly fear the spread of this plant. A common broad oo or whale spade makes an excellent instrument for cutting the leaves. They may be put in a cart, or wheel-barrows by a shovel or manure fork and transported to the place where they are wanted. All the preparation the ground requires is the removal of stones, if they are in the way, and the clearing away of all brush and trees, for this plant will not bear the least shade. On this account it is not well to disturb the soil, or even to clear away entirely the grass, lest a crop of weeds should be encouraged to put up and shade the young plant, thus retarding its growth or causing it to grow weakly.

The ground prepared and the leaves on hand, all that remains is to lay down a belt of them about a yard wide, as close together as they can be laid on their broad sides. They now require watching for a short time that they may not be removed, and any which decay must be replaced by those which are sound. Every thing which would shade it must also be kept away. On this account it is rather desirable than otherwise that cattle be allowed free access to it, as they will keep the grass, &c., away, and are generally careful not to meddle with it. Goats and swine must however be excepted—they will be apt to ruin a young hedge. One cannot be too careful about bruising or puncturing the leaves, as they are very likely to rot if so treated. In a few weeks afer laying down they will all be found tied fast by a root which strikes down from the middle of the leaf, and soon after young leaves appear. Should the season be dry the leaf will gradually form itself into a cup which will catch the small showers, and thus nourish itself and strengthen its root, even if it throws out few or no leaves. It must be a dry season indeed which will destroy it.

Great care is necessary to prevent gaps in the hedge. These can only be prevented by care while the plant is young. If the gaps are allowed to remain till the plant becomes large, that which is already grown will shade any that may be planted near, and prevent its becoming strong. It will also have pre-occupied the soil with its roots, giving no chance to the new plant.

It is I believe necessary that all kinds of living hedges grow up together.

Under the most favorable circumstances, about three years will be required to produce a hedge of Cactus which will turn all kinds of animals. The winds may blow and the rains fall, but the fence will still remain—and increase. It will not rot like the worthless adobie, which falls just when you most need it. It will not tumble, or be tumbled like the stone wall, and should it incline to spread, one-fourth of the cost necessary to keep any other fence in repair will keep it within bounds.

E. BAILEY.

REPORT OF THE COMMITTEE ON SHEEP.

To the President and Gentlemen of the R. H. Agricultural Society:

GENTLEMEN,—Since our last meeting the question with those interested in sheep has been, what shall we breed for—mutton or wool? The mutton party do not quite agree with the gentleman who so ably reported last year that "we can raise sheep enough on these islands to make mutton a drug." They say the amount of land adapted for sheep-walks on this entire group is not so large as some people, who have not gone into the matter, imagine; for a great part of the plains and uplands are covered with grass highly injurious to lambs and even full-grown sheep. This grass bears a seed which attaches itself about the nostrils and eyes in a way highly irritating to the animal; besides which it sometimes works through the fleece and is found buried half an inch deep in the fat on the back. From this they argue that the number of sheep supported at a profit will never be extravagantly great. Then again, they hold that for a long time to come, California will carry off a large quantity of our mutton, for sheep stand a voyage well, and steamers and Ericssons will take them across with great ease to themselves and perhaps profit to those who ship them. Also that the consumption of the article is increasing in our market, whilst the additional number of clippers and other passenger ships that begin to touch here, and the steamers that will touch here by and bye,

during the course of their inter-Pacific voyages, will carry off considerable numbers for sea stock.

The wool faction on the other side, are not quite so sanguine about all this, and maintain stoutly that the market can be drugged and in all probability will be so before very long. That real Umpire, Time, must decide between them.

One of your committee (Mr. Cummins) is looking for a fine breed of South Downs from Boston, due in about a month by the Matanzas, from which he expects to stock his land with sheep of good shape, fine wool and a very good average weight of well-flavored meat. These sheep are said to be hardy and to fatten readily, and will probably take up a central position between the extremes of wool without mutton and mutton without wool.

Mr. Moffitt, of Koolaulos, has hitherto infused more new blood into his flock than any other raiser of sheep on these islands, and his stock shows more improvement accordingly. By H. M.'s Yacht Harriet, he introduced six fine Merinos, which, added to those he had previously procured, give him at present a complement of twelve imported sheep of that highly valued breed. As to the quality of the wool he will produce there can be no doubt, nor does it appear but that with judicious crossing the carcasses will quite reach to what the butchers consider a profitable weight for the shambles.

Let sheep farmers remember three great points necessary to their success and your committee think they will do well for themselves and become every year more valuable members of the community. Let them—

1st. Shear systematically and well.

2d. Tame their sheep—whatever it cost, tame them.

3d. Fight with the dogs; hate them; despise them; petition against them; shoot them; poison them.

JOHN MEEK,
THOMAS CUMMINS,
CHARLES GORDON HOPKINS.

REPORT OF THE COMMITTEE ON PROCURING SEED FROM THE SUGAR CANE.

Hon. William L. Lee, President of the R. H. Agricultural Society:

SIR:—As Chairman of the committee to obtain plants from the seed of the sugar cane, I regret to be compelled a second time to present an unsatisfactory report.

On Hawaii Mr. Pitman has been prevented from making any experiments to test the process suggested by Mr. Teschemaker, for obtaining germinating seed from the cane, he having been unable to find a suitable spot in his neighborhood in which to attempt them.

I subjoin a letter received from Mr. Pitman, from which it will be seen that he has little faith in the practical advantages which would follow success.

From Dr. Baldwin, of Maui, and Dr. Lathrop, of Oahu, the other members of the committee, I have received no report.

On Kauai, I have made some experiments, following as nearly as possible the directions of Mr. Teschemaker, but I am sorry to say that they have as yet met with no favorable result. Still the pursuit is an interesting one, and I do not yet despair of final success.

I am by no means sure that the varieties of cane which we have are the best possible for our soil and clime. The agriculture of the world may be enriched by the introduction of new varieties of the cane.

This is a subject well worthy of the continued attention of the Royal Hawaiian Agricultural Society.

Most respectfully, your obedient servant,

EDWARD P. BOND.

To E. P. Bond, Esq., Chairman of the Committee for Producing Sugar Cane Seed.

The methods to be pursued in order to make the sugar cane produce seed as laid before the Society last year by Mr. Teschemaker, is incompatible with the soil of Hilo. It would require a large capital to enter on the experiment; a single individual could not travel over the island to find a fitting soil, and even should it succeed in our place

it would require some years to produce a sufficient quantity of plants to form a plantation in any other district than where it originated. The first variety of sugar cane, at least the one longest known, is the Creole, which grows best in a moist soil, and is the best adapted to Hilo; the next is the Tahitian cane, thriving and yielding best in a dry soil, such as all along the western side of Hawaii. But even should any one be so fortunate as to raise cane, the seeds of which will ripen in Hilo, the same seeds would not ripen in Kona—neither would the seed raised in Kona produce plants in Hilo—the soil and climate being so very dissimilar. The sugar cane flowers as well here as in any part of the West Indias, but here as well as there the seeds are abortive. There is but one part of the world in which the cane flowers produce seed, and that is in the East Indias, the cane of which country would not pay the cultivator, even should it chance to grow—at least all the experiments in America and the West India Islands to propagate from seed have failed. As to variety we have here four of the Arundo Saccharifera, but what their botanical definitions are I do not know. The most prolific in juice and largest sized is the red cane; next the yellow cane; then the yellow and green striped; and last, the small red cane called "Ohi;" which latter, although the smallest, is by far the sweetest. The reason why the planters in this district prefer the second variety is, that on account of the humidity of Hilo, the red cane gives out its coloring matter in grinding and thereby produces a sugar of a darker color than that of the yellow cane, on account of its holding a larger portion of Albumen in solution. Therefore I am of opinion that cane propagated from seed would require a greater amount of capital and labor than if produced from the buds.

I have the honor to be Sir, your obedient servant,

B. PITMAN.

REPORT OF THE COMMITTEE ON BIRDS.

Mr. Severance from the Committee appointed to procure Insectivorous Birds, made the following report:

I will not venture to speak on behalf of the committee, because I hope some of them have done more than I have; but having consulted with several of the members, we came to the conclusion that we could not take the responsibility of expending any money in procuring birds, at least until some laws should be passed to protect them from destruction when obtained. Fire arms have so far come into use among the natives, that while there are no penalties and no laws, and not even a public sentiment against shooting birds, any imported bird being rendered tame by confinement, would immediately attract the attention of native boys, and be in great danger of being shot or otherwise killed.

There are but few birds on the islands, but there are some of the most beautiful kinds; and while these are destroyed by hundreds for the amusement of the sportsman, foreign or native, it is not thought expedient to expend much money in importing foreign birds of no greater utility. The Kolea or Plover, is perhaps as useful in destroying insects, and especially the pelua, as the robin or any other bird of the continent, and yet many of these birds are shot or scared away from cultivated lands, instead of being allowed to range over them free from danger.

There is but one bird of prey which has attracted my notice, and that is a hawk or owl. It has the appearance of the owl, but it flies about at mid-day in pursuit of prey, and never in the night, that I am aware of. It sometimes catches young turkeys and chickens, but probably much more than compensates for this by destroying field mice, which seem to be its principal food.

We are not to forget that we have already the most valuable birds among us, viz: turkeys, hens, geese and ducks. Of the last three we have many varieties. The flesh of the native goose is very good, and so is that of the Chinese goose. The eggs of the latter are large and of excellent quality, much superior to those of the duck or the European goose. The China goose like the China fowl has a heavy body and short wings, and can easily be confined by close fences. The native goose flies with as much facility as the American wild goose.—

It is not so large however, being the size of the brant. But this is diverging from the duty prescribed to the committee, though we may be permitted here to refer to the well known fact that all these domestic fowls are most efficient destroyers of a great variety of insects and their larvae, and were it not for them many localities would swarm with lizards, spiders, centipedes, scorpions, roaches, &c.

Noxious insects and noxious or useless plants find their way to these islands in boxes and bales of merchandize; but birds never come in that way. When we take pains to import them we should be careful to leave behind those which would do much mischief. The class of insectivorous birds is a very large one, including the greater number of small birds, though many of them are omnivorous, eating vegetable as well as animal food. Some of these are very mischievous, pulling up the newly planted corn or other grain while it is germinating, and devouring the ripened grain in great quantities. Among these the pigeon, the crow, black bird and blue jay, have a bad reputation, while the marten, king bird, and other fly catchers destroy the honey bee, and the woodpeckers select the sweetest apples and best cherries. The robin also is very partial to cherries in their season, and we suspect would eat the fig and banana, but his favorite food is the ant worm, and hence his utility.

The bluebird, the sparrow, the Baltimore oriole, the scarlet tanger, the thrush, the mocking bird and the wren, are among the birds deemed harmless; most of them are singing birds, and all feed on insects. A great number might no doubt be added to the list. All these we presume could be obtained in California or Oregon, and perhaps the best way to obtain them is to offer a bounty for them delivered here.

There are other birds which would be useful. The ortolan and the woodcock are greatly esteemed for their fish. The canvas back duck is highly prized. Both feed on worms. The white stork is a famous rat catcher, and devours reptiles, offal, &c. Being like a turkey buzzard a capital scavenger, he is in some countries protected by law, and becomes as tame as any domestic fowl. He spends the summer in Europe, and the winter in Africa. There is however, little need of scavenger birds here, for the fowls, the dogs and the ants soon devour all putrid animal matter left above ground.

Without taking up more time on the subject, we would recommend that the Society look to the preservation of the native insectivorous birds, and offer premiums for such foreign and harmless insectivorous birds as can be obtained without great cost.

REPORT OF THE COMMITTEE ON STATISTICS.

To the President and Members of the R. H. Agricultural Society:

I regret that for want of time I have been unable to procure data of sufficient interest to the Society to form a report upon statistics worthy of your consideration.

As the Society have done me the honor to publish in the third volume of transactions, a table of the exports of the principal articles of production from the year 1844 to 1851, inclusive, and the value of the total domestic exports for each year, I now offer the following as a continuation of that table.

	Average for three years, 1849, '50 and '51.	1852.
Sugar, lbs.	475,029	729,877
Molasses, galls.,	36,240	46,136
Syrup, "	45,229	35,375
Coffee, lbs.,	87,949	117,210
Salt, bbls.	4,195	7,118
Irish Potatoes, bbls.	32,246	8,223
Sweet " "	5,718	6,063
Onions, "		
Arrow Root, lbs.,	7,710	21,444
Hides,	2,342	1,019
Goat Skins	28,049	29,779
Tallow, lbs.,	8,564	6,294
Total value of *all* the exports *as cargo*,	$222,651 77	$129,613 69

The very large shipments of Irish potatoes and other vegetables at high prices in 1850 and the early part of 1851, and the small shipments and low prices of 1852 make the average value of exports appear decidedly unfavorable to 1852, though most of the valuable and reliable products show an encouraging increase.

Of sugar, potatoes, swine and poultry there have been considerable quantities shipped to California since January last, and they have uniformly commanded fair paying prices. During the last year a new article of export has been discovered which at one time seemed to

promise to be an important article in our commerce, and which is still in demand, though not in large quantities or at the high prices it brought at first, I refer to the "Pepeiao Akua," a species of fungus, found upon the trunks of Kukui trees. About 5000 lbs. were sent to San Francisco last year.

Trusting that the gentlemen on the same committee with myself will have something to offer you more worthy of the name Report, than the foregoing, I will only add that wool, an article which might be, and probably will be produced here in large quantities, had not up to the 1st January, 1853, had a place among our exports. Since January, there have been 4,395 pounds, the clippings of Messrs. Macy & Louzada's flock, shipped to the United States, and there is now at least one other lot ready for market.

CHARLES R. BISHOP.

REPORT OF THE COMMITTEE ON TANNING.

It was the intention of the Chairman of the Committee on Leather and Tanning to have collected and presented in this report accurate and complete information in regard to the tanning business at these islands, but such is its limited condition that its statistics would furnish no satisfactory basis for general conclusions.

The Chairman will therefore present merely a few of his own convictions on this subject, together with a valuable letter from the member of the Committee from Hawaii.

There appear no good reasons for our depending mainly upon a foreign country for leather, boots and shoes.

Hides of excellent quality, fresh in many cases, and uninjured by the processes of drying and voyaging, superior barks, lime, a warm climate favoring and facilitating the chemical combinations which produce leather, eligible situations where hides, bark and water are brought together in a business that requires only a moderate capital, where the operations are of comparative simplicity, where the product finds a speedy and remunerative sale, and finally where the labor is eminently healthful, these are existing facts among us which indicate that the manufacture of leather would be advantageous both to the individual and to the state.

The capacity of our own market need not be the measure of our production.

With an article, the raw material of which costs us but half the amount paid by the American manufacturer, and at a distance from market only half as great, we can undersell him in California; and neither Manila, China nor South America will come forward as competitors; our only limit here is our ability, and that ability measurably determined by our zeal and energy.

Our well-tanned sole leather is of the first quality, excelling the imported article in softness and durability, the large proportion of tannin compared with the extractive matter in our barks contributing largely to this favorable result.

In the communication above referred to, the business of tanning is represented as barely affording a subsistance to the tanner. Whilst this may be correct in reference to particular localities and very limited operations, it can scarcely apply to favorable situations, with suitable and adequate appliances. As in other manufactures, a respectable amount of capital and preparation are essential pre-requisites to success.

The leather business generally, at the islands, has hardly advanced proportionably with other manufactures. Some of its processes have not yet been introduced, but it is to be hoped that the requisite skill and appliances will soon find their way among us.

Probably our yearly consumption of leather in all its forms will not fall much short of $100,000 in value, and this consumption is steadily increasing.

For this, our own herds, forests and coral reefs could furnish the material, and our people manufacture it, thus retaining our money at home and enriching our men of enterprise, engaged in this laudable branch of business. Respectfully submitted,

J. HARDY.

To J. Hardy, Esq., Chairman of the Committee on Leather & Tanning:

SIR:—That leather can be as well tanned and prepared on these islands for all the various uses to which it is adapted, the specimens which I have the honor to lay before the Society at this meeting fully prove; and although it is not to be expected that it can compete with

the foreign manufacture, still I think when all the difficulties attendant on the want of mechanical appliances are considered, the presented specimens will meet with their just meed of praise. The difficulty which now exists in tanning leather so as to render it profitable is—the procuring of bark. The Konohikis demanding so high a price for permission to get bark; the distance and time required to procure it; the payment of hired labor, and the low price which leather brings, barely suffice to procure the common necessaries of life. Neither have we any lime on this side of the island; it has to be brought from Kawaihae or Oahu, which forms a heavy item in the necessary expenses. The bark has also to be pounded by hand as we have no mills, nor mill-wrights to construct one; thus at the present time in this district, the tanner labors under the greatest difficulties; and should the restrictions on getting bark be increased, this essential branch of industry will naturally be paralyzed. The purchase of foreign bark if imported, unless it be in such quantities as to ensure a constant supply, and be procurable at so low a rate as to enable the tanner to compete with foreign leather, would be of no avail.

The barks mostly used in tanning are the Koa and Ohia. Many others have been used and produce a very handsome leather, but as the trees are small and scarce they are not used except to tan a few skins of a lighter color for any particular purpose. The strongest bark—that is the one which contains the most tannin—is the bark or the root of the Kukui or Candle Nut tree. It bears the same proportion to Koa bark, as Catechu does to Oak bark, that is, one pound to ten. Ohia bark gives a lighter color to leather than Koa, and does not contain so much tannin, and the liquor is always the better for a little Kukui bark. Shumach or the Nanelehau gives an elegant color to kid skins. All leather tanned on the islands is in quality equal to foreign leather, but for want of the necessary appliances for the finishing, has not the same completed appearance; though for use and wear it is every way equal to the foreign importation.

I have the honor to be sir, yours very respectfully,

B. PITMAN.

REPORT ON GARDEN SEEDS AND FLOWERS.

"But among all the methods of enriching one's self, there is no one better, no one more profitable, and pleasant, and agreeable, no one more worthy of a man and a gentleman, than that of manuring and tilling the ground."—*Extract from a communication of Cicero, to his son Marcus.*

Having been appointed with several others, to report upon the subject of "Garden Seeds and Fruits," I deemed it advisable to notify the other members on the committee; when, to my surprise, I learned that Mr. Duncan, (a professional gardner, and who should have been the Chairman of this committee,) had gone to Australia, Mr. Bowlin to California, while Mr. Kinney, residing in Kau, on Hawaii, would not visit Honolulu, at this season, hence only Mr. Cleghorn and myself remained to discharge the duty of the committee. How it should have occurred that my name should have been placed upon the committee, before that of Mr. Cleghorn, I cannot imagine, for in all matters, pertaining to seeds, fruits, &c., I should be quite willing to sit at his feet and have him discourse, like Solomon of old, who "spake of trees from the cedar that is in Lebanon, even unto the hyssop that springeth out of the wall." 1 Kings, 4: 33. As it may not be known to some present, I would remark that Mr. Cleghorn, is a seed-man, by profession, and I doubt not could, and would if requested, furnish much useful information upon this subject, to the Society. I am happy to learn that he has prepared a few remarks, which he will read on this occasion.

To prepare myself for writing this report, I concluded not to examine books written by man, but go forth and study the laws of the "book of nature," as they might be turned over and explained, by more of our most practical gardners in the vicinity of Honolulu.

I first visited the small but well cultivated garden of the proprietor of the French Hotel, Monsieur Victor. The small patch of land, which he has brought under cultivation shows what can be done, in the very heart of Honolulu, where the peculiarity of the sandy soil, resting upon a layer of volcanic cinder, renders cultivation exceedingly difficult, except during the rainy season. I found he had growing in his garden, beets, turnips, radishes, beans, corn, &c.—He complained of the want of good seed, but informed me, that he had made arrangements for a good supply of garden seeds, to arrive from France. The example of Mr. Victor, as a practical gardner on

a limited scale, is well worthy of the imitation of every house-keeper in Honolulu. The dwellings of the foreign residents, are surrounded with abundant land, wherein to raise all the vegetables necessary for their families *provided the spade, hoe and rake are skillfully exercised by the inmate of the dwelling.*

I next visited the premises of the veteran gardener, in the vicinity of Honolulu. I refer to Mr. Alexander Adams. I found growing in his garden, viz: parsnips, carrots, beets, cucumbers, radishes, turnips, cabbages, &c. Mr. Adams finds his greatest difficulty to consist in his inability to obtain good seed. He expressed the opinion, that, he thought one reason why the seeds upon the islands were no better, was this, that the vegetables were not allowed to remain in the earth sufficiently long. Mr. Adams is doing more for fruits than any other person in this vicinity. He has succeeded in bringing forward the Mango, having a fine tree seven years old growing near his house.—It now abounds with fruit. He has also succeeded with the lemon, the Chinese orange, the peach and fig trees. Of the latter he has three different species, in bearing, viz: the turkey, tree and bush fig.

Mr. Rice, at Punahou, furnished me with the following memoradum respecting vegetables raised at that location. The following are seed bearing:

Squashes,	4	varieties.
Melons,	3	"
Cucumbers,	2	"
Tomatoes,	2	"
Beans,	5	"
Carrots,	1	"
Radishes,	1	"

The following are non-seed-bearing: onions, turnips, beets, cabbages, kalo.

In my rambles, I have visited the garden of Mr. Montgomery, who has entered upon the business of gardening more energetically and scientifically than any other person in Honolulu. His remarks, in his late address, before our Society, indicate that gardening with him, is what it should be with others, a most pleasing and delightful employment. He has succeeded remarkably well in raising various and ordinary kinds of vegetables, but complains in strains similar to those of M. Victor and Mr. Adams, that it is extremely difficult to obtain even

a tolerable supply of good seed. He has ordered a supply from New South Wales, and hopes to receive them in time to improve the next planting season.

The subject of gardening has hitherto been most sadly neglected at the islands. It is only within four or five years that the subject received any attention, beyond raising a moderate supply of the most common garden vegetables. Efforts have not been made to introduce good fresh seed. The poor quality and limited supply of garden products is a common subject of remark and just censure on the part of strangers visiting our shores. I doubt not that more has been done for fruits and vegetables in California during the last three years, than has been done here since the islands were discovered.—At that period, the islands furnished but a few species, including kalo, sweet potatoes, bananas, ohia apples, &c. The catalogue is now much enlarged, but the supply of the rare species of fruits and vegetables, is upon the most limited scale. There is one species however, for which the soil is well adapted, and the supply most abundant: I refer to the luscious watermelon!

In pursuing my enquiries I have become acquainted with the existence of one new product of our forests, which is now used for food among the Chinese, and which has, during the last year, been exported. I refer to the *Pepeau Akua*, or species of Fungus or Lichen, growing upon the Kukui trees, in wet and damp parts of the islands. On this island it has been gathered, principally in the vicinity of Waialua. The Rev. Mr. Emerson informs me that it is quite extensively used by the Chinese, and that it is by no means, an unwholesome or unsavory dish when properly prepared. He has several times eaten it. It is especially worthy of attention, in as much as it has become an article of export. The following items I copy from the books of the Collector of Customs, in Honolulu, relating to the amounts of this article exported:

August	1852,	exported	from	Honolulu	to San Francisco,	550 lbs.
October	"	"	"	"	"	1,051 "
November	"	"	"	"	"	1,390 "
December	"	"	"	"	"	1,860 "
February	1853,	"	"	"	"	5,105 "
"	"	"	"	"	"	3,967 "
"	"	"	from	Lahaina	"	550 "
						14,473

I learn that the article has brought as high as forty cents per pound, in the San Francisco market, although so high a price could not be depended upon. Six cents per pound is the usual invoice price.

In regard to one branch of the subject assigned to this committee, I have written but little, and for the very good reason, that hitherto but little attention has been paid to it upon the islands. I refer to *fruits*. The fig and the grape have received the most attention, but in looking over the schedule of subjects, I perceive that both of these are assigned to other committees. I cannot however, refrain from referring to a single fact, in regard to the fig tree; illustrative of the point, that ship masters, may do much in the way of transferring fruit trees from one part of the world to another. In the year 1843, my neighbor Capt. Penhallow, took much trouble to bring from "St. Catharines," to Honolulu, a slip of the Turkey fig. He succeeded in landing it in a tolerably healthy state. It was given to another neighbor, of mine, Mr. Ladd. who planted it near my study door, and hence, I have had a good opportunity to watch its growth. At first it required no small amount of labor and extra watching to cause it to put forth leaves.—For a season, serious fears were entertained, that it would droop and die, but careful nursing and pruning, eventually succeeded in bringing the tree to maturity. Ten years have now elapsed, and what is the result? From that one tree, almost a countless number of slips have been cut, which are flourishing in almost every garden in Honolulu, and other parts of the islands. Year after year, visitors have slipped off the young shoots, but still the parent tree continues to put forth a fresh supply; thus nature verifies the saying of Solomon, "There is that scattereth, and yet increaseth." I think that both the person who brought this fig tree from St. Catharines, and the one who nursed it after its arrival, are deserving of the thanks of the community, and a medal, at least, from the "Royal Hawaiian Agricultural Society."

In concluding my report, I am happy in being able to present the following communication from G. Wundenberg Esq., late of Hanelei, Kauai.

All of which is respectfully submitted,

S. C. DAMON.

To Rev. S. C. Damon, Honolulu:

DEAR SIR.—With pleasure I comply with your request of this evening to furnish you with an account of such fruit trees and vegetables as I have attempted to cultivate at Hanalei, and how far I have succeeded. I have paid a good deal of attention principally to the raising of fruit trees, but my time being limited, my remarks can be only short. Allow me to remark in the outset that Hanalei is rather a wet place, the soil very fertile, and vegetation very luxuriant.

THE ORANGE grows well at Hanalei when the tree has once reached a certain age, that is to say until it bears fruit, but it is very difficult to get the tree to that stage. After the seed is planted, in about six weeks the young tree appears and grows up sprightly until about a year old, when the tree will be about two feet high; but now the branches commence decaying and die off. Sometimes after new branches shoot out die off again and make place for new ones; during all this time the main stem is constantly increasing and singular as it may appear, it is nevertheless the result of years experience that the more attention you pay to the young tree the more you retard its growth. Experience has taught me that to raise orange trees you had better leave them entirely to themselves, without pruning or weeding them. Mr. Archer and myself have repeatedly talked on the subject, and he also can testify that we have found trees entirely overgrown by grass, in a by far more healthy condition than those on which all possible care was bestowed. It will require at least ten years before an orange tree begins to bear from the time the seed was planted. These Islands cannot compete with the Society Islands in the cultivation of oranges.

THE LIME.—Nearly the same is to be said of the lime that I stated of the orange, but the lime is rather hardier and commences bearing after the fifth year.

THE TAHITIAN LEMON.—The same remarks I have made on the orange apply here also. I never have succeeded to get them to bear. The only ones I have seen here on the islands were those exhibited this year by Capt. Adams.

THE LISBON LEMON belongs to the same tribe but does not grow to so high a tree as the three previously mentioned. When I left Hanalei

my trees, or rather bushes, were about six feet high, four years old and in bearing. The tree wants to be kept clear of weeds and otherwise taken care of by pruning, etc. It (the bush) resembles very much the tree in appearance and its nature.

THE CITRON, which is easily cultivated, thrives well in Hanalei. It grows into a straggling bush, long thin branches, is pretty hardy, and bears the third year. The above are all belonging to that tribe I have tried to cultivate at Hanalei.

In 1848 I planted at Hanalei first time

THE VI TREE, a Tahitian fruit tree, the fruit much resembling the mango in size and shape. The Vi grows well at Hanalei; when I left I had one tree about fifteen or more feet high, and appeared to do as well there as on Tahiti. I presume the tree will commence bearing when about seven years old.

THE MAPEE or Tahitian Chestnut, a slow growing tree with a beautiful shining leaf, quite yellow when young, afterwards dark green; fruit kidney shape, about four or five inches long, and about three inches wide; resembles much the chestnut which we use, and is used in the same way. I planted mine in 1849, from seeds. When I left they were about four feet high and doing well.

PEACHES.—Of peaches I had only one kind in bearing when I left, but I had about eight different superior kinds which I had raised from seeds from Valparaiso and New South Wales. I presume some of them will have borne fruit this year. Peaches are doing very well in Hanalei, and grow there to very large trees.

THE LOQUAT grows well at Hanalei so far as I have seen. I had only one tree grown from seed planted in 1850. The tree looked very healthy and was growing fast.

FIGS grow well enough in Hanalei but I think that they want rather a little dryer climate. The trees grow up fast but the fruit is liable to burst from the wet.

THE CHIRIMOYA I tried to cultivate for several years but without success. The tree would grow up about two feet high, and there remain stationary for years. Somewhere about 1850 Mr. Wilcox told me that he had experienced the same difficulty but had overcome it by planting it on a spot where the natives had had an oven. There all

the decayed vegetable matter and ashes must make the soil extremely rich; I tried the experiment with a tree which had been stationary for about two years, and the result was beyond expectation; in about six months the tree shot up to the height of about eight feet.

THE CUSTARD APPLE.—Two kinds from Tahiti, nearly the same as the Chirimoya, but more delicious in taste and comes sooner to perfection; I am told that they will yield fruit in Tahiti eighteen months after planting from seeds. I have tried them repeatedly, but all my attempts to cultivate them successfully have been vain.

THE DATE grows well there if kept clean and sheltered from the winds. I had two trees, but too small to expect fruit soon.

THE CACAO seems to grow well at Hanalei. I had planted in 1851 about twenty young trees from seed I procured from Mr. Manini's garden here in Honolulu. They were small yet, but from appearance they would do well there.

THE GUAVA.—I had three different kinds; the common guava, the sour guava and the white guava. All three kinds thrive alike well.—The latter kind is a particular pretty looking tree, and I rather wonder to see it not more about the houses of residents, as it is very ornamental.

THE TAMARIND does well there. I planted some trees in 1847, in the fall of the year; they were in blossom for the first time, in May, 1852.

THE PAPAYA OR PAPAA APPLE, grows well in Hanalei. This is a most useful tree; I have had always a large number growing on my place, and was glad to hear Mr. Montgomery draw the attention of the public to this tree in his address. They will commence bearing about eight months after planted from seed, and continue bearing for about four or five years, having constantly fruit of all sizes on them. The fruit of the young trees is the largest and best; I have had fruit of about ten inches in diameter. Allow me to draw your attention to the fact that there are a male and female tree; the former does not bear any fruit or at least very seldom, (I have had twice a male tree bearing fruit,) and care is therefore to be taken to plant only the female tree; but you cannot distinguish them until they begin to show blossom. In sowing the seeds the proportion of the male to the female

tree is generally greater, I should say about three male to one female tree. I have sown the seeds in a nursery in drills; when the young plants were about a foot high I transplanted them to their proper places, always three or four in a cluster, and when they showed their blosom left only one standing and cut down the rest. They are excellent food for poultry and pigs, but make also very good pies and tarts if a little lime juice is added to them.

The Bread Fruit grows well at Hanalei. I had planted a good number in my fowl yard, and they were doing extremely well; it is a most useful and very pretty tree. I planted them in the fall of 1847, and when I left in 1852, some of them were about 25 feet high. I expect they commence bearing when about seven years old. They want much care when first planted out, and have only succeeded by planting them out in the winter time and when it was very wet.

Bananas and Plantains grow very well every where, particularly if protected from the winds.

Pine Apples.—There were originally two kinds in Hanalei, one of brown yellow color and the other of a bright yellow; the former, the larger kind and perhaps on the whole, the most preferable. But I had latterly a few plants of the Tahitian pine apples, from Tahiti, a very superior fruit. They are propagated from succors and grow exceedingly well in Hanalei.

Besides, Strawberries and grapes grow at Hanalei; but I think they grow better in a more dry climate.

Of vegetables, all the different kinds, as yet cultivated on these islands, grow well there.

Irish Potatoes I have grown there, superior to any I have seen on the other islands. In the spring of 1852, I had a crop in my garden which looked as well as any I have ever seen in Europe.—Some of the vines were about six feet long and yet they yielded as abundantly as potatoes at home. Mr. Johnson and Mr. Archer, as well as Mr. Whitney, who have seen them, can bear witness to their appearance.

Sweet Potatoes do well enough on the hill sides, but on the whole it is too wet for them in Hanalei; they run to immense vines, but if not constantly cut down will not bear much fruit.

PUMPKINS, MELONS AND SQUASHES of all descriptions grow well.—Of the Pumpkin kind I have found the so called CROOKED NECK SQUASH, the one which yielded the most abundantly and is also, perhaps, the best flavored.

The VEGETABLE MARROW SQUASH grows well, and it has been much liked there.

Of CUCUMBERS, which also grow equally well, I had two kinds.

CABBAGES grow well there, and superior to any I have seen on Oahu; what is remarkable, is, that cabbage never goes to seed; it is propagated by the suckers from the old trunk. It does not deteriorate in quality by this process as might be expected; I have always raised better cabbage from those suckers than from imported seed.

CARROTS grow well and go to seed.

LETTUCE AND ENDIVE, do. do.

TOMATOES grows very luxuriant.

BEANS grow exceedingly well, except the brown bean which I have tried repeatedly, but have never succeeded to get more returns than the seed I had planted, and that rather deteriorated.

PEAS grow very well, but are very difficult to raise on account of the attacks from the ant worm, to which they are particularly liable. If there are any ant worms in the garden or the vicinity, they are sure to find their way to the young peas.

THE PEA NUT grows exceedingly well there, is easily raised, and yields abundant crops. I have raised as fine pea nuts as ever I have seen anywhere.

TURNIPS succeed, but are difficult to raise on account of their being attacked when young by a fly who destroys in short time a whole bed. Lime and ashes, which I have tried as a protection to the young plants, have not proved as effectual as might have been expected.

ONIONS AND CHALLOTS grow well, particularly the latter; the former want rather a more dry soil, and is liable to rot, if it comes on wet for a length of time, as it frequently does in Hanalei.

I have tried at various times, different other kinds of vegetables, but have been obliged to give them up again for want of labor.

SAGE, MARJORAM, THYME, PARSLEY, CELERY, and various other kinds grow well, and could be supplied from there easy, if conveyance

were not wanting. Nature has done for that place everything we could possibly expect, high as our expectations often run. It does not require any exertion to make the articles grow, but it requires a good deal of trouble to prevent the weeds, the growth of which beats any thing I ever have seen, from overgrowing and choking your vegetables.

The flower gardens of Hanalei are worth while seeing; I think they will favorably compare with any on these islands, and I think that Mrs. G. Rhodes, of Hanalei, who has always paid very much attention to Horticulture, has by great perseverance and diligence succeeded to gather as great a selection of flowers as you will see in any single garden on these islands.

But I must conclude from want of time at the present moment.—Please excuse this hasty scribbling; I just have given you what was uppermost in my mind, without regard to order or style.

Truly yours,

G. WUNDENBERG.

REPORT OF THE COMMITTEE ON GRAINS.

Mr. President and Gentlemen of the R. H. Agricultural Society:

Your committee are happy to report a very decided advance the present year on any former one in raising grain. The amount and very promising growth of wheat now nearly ready for the harvest, on East Maui, leads your committee to hope that the time is not distant when we shall see in our market *flour* of the Wailuku, Makawao or East Maui brand, instead of Richmond, Haxall and Gallego. We hope too to see the former in such abundance and at such prices as not only to drive the latter from our market, but that we may have no small amount to send to other markets.

On the subject of raising wheat allow me to submit to you a report from a member of the committee living in the wheat region, and himself a wheat grower.

"In reply to your request for facts in relation to the raising of grain, particularly of wheat, and for such thoughts as the subject may

suggest, I hasten to prepare something which you may embody in your report and present at the approaching meeting of your Society.

It is found by measurement that there are growing at Makawao, nearly 140 acres of wheat, owned by nine or ten individuals. Of these, 70 acres were sown broad-cast, by Mr. Henry J. G. Croswell. The wheat is of good growth and much of it headed out. In the sown field Mr. J. T. Gower, has small patches of Australian, Oregon and California wheat, of fair promise, and nearly 32 acres are standing on the land of the member of the committee who now addresses you. Some of it is nearly ready for the sickle. Indeed, but for the remarkably wet and cold season, a portion of it would have been harvested ere this. I did hope to send to your table this year some loaves made from our new grown wheat, but I am unable to furnish a single ripe sheaf. Of my own method of sowing I will speak hereafter. The next field in size was sown broad-cast, by Mr. John Smith, a Dane. He has 15 acres, of large growth and fine promise. Kileapa, a brother of Mrs. McLane, has 10 acres, and two other Hawaiians have each one or two acres looking exceedingly well. The remainder belongs to the following gentlemen, Messrs. Miner, Boardman, Sayre and Clark, and is promising.

This brief notice of the amount of wheat now growing at Makawao, will show a considerable advance on the same product of last year, and the advance would have been much greater but for the want of seed. Could this have been obtained I think 400 or even 500 acres would have been sown; probably 100 acres by the natives.

The capabilities of our soil on this part of Maui, are not small.—True we are somewhat pent up, having no "boundless continent," nor broad prairies, which extend far as the eye can reach, of which they of the old homestead boast. Nor do we need such prairies while we lack as now, cultivators of the soil and good markets.—Contracted as is our field, we have occasion to say as did mother Eve, at a certain time when *laborers* were scarce and *farms* were large, "Till more hands aid us the work under *our* labor grows."

The soil of Makawao is certainly *admirably* adapted to the growth of wheat oats and other grains. And as our fields are contracted and laborers few, it becomes our duty as it is certainly our privilege to make up in *fatness* what we lack in extent, to cause our small posses-

sessions to yield an hundred fold. If one acre can be made to produce what we now glean from five, as I verily believe to be possible, what a saving of time and strength may be realized. One great advantage as I suppose, of agricultural societies and agricultural newspapers, is the facilities they afford of communicating and reviewing knowledge, as to the speediest and most effectual method of subduing mother earth, and bringing her back to her pristine state of fruitfulness, so that the wants of all her numerous children may be supplied from her bounteous lap.. You will excuse me, therefore, for giving you the result of another year's experience in raising wheat, in answer to certain questions propounded of late as to the best mode of preparing the soil, the time and manner of sowing, whether in drills or broad-cast, method of harvesting, preserving the grain from the ravages of insects, &c. &c. I take my own case, because as a matter of course, I know more of my own labors, discouragements and success than of others.

Two boys of 14 to 15 years of age, perhaps, of African and Hawaiian descent, have been my only helpers. They were handy in the management of oxen, and besides most of my ploughing, they took care of our cows and did the milking. The wheat land they ploughed, and after lying a while in the furrow to allow the Kolea, (a Hawaiian bird useful for the purpose,) to destroy the crop of Pelua, we harrowed the field and gave it the second ploughing. The Kolea gave the furrows another cropping, after which we prepared for sowing. Some four or five acres I sowed broad-cast. The remaider I sowed in drills or planted in hills. I commenced in December, the land being drilled or furrowed so thickly that it was benefitted nearly as much as though it had been ploughed the third time. I planted daily a small quantity only till February, when I sowed the remainder, but so cast it that the greatest portion fell into the furrows. This I then caused to be covered with the harrow. I cannot yet speak decidedly, but I now think this latter a good method of sowing wheat.

About the 10th of March I finished the sowing of my wheat, some 70 bushels. So far, so good. For a few nights I rested well, free from care. But I soon found that my charge required a constant, well nigh sleepless vigilance. The pelua, or cut worm, did me some damage, though not greater than I had reason to expect. Of course

there was no remedy but patience and submission for the ravages of this insect. But as we have no fences about our fields, watchfulness by day and by night, against the intrusion of cattle and horses, is indispensable. Scarcely a single night, since the grain became high enough to attract the attention of cattle, has passed, in which I have not taken the rounds by moon-light and star-light, or lamp-light, in the rain, or during a cessation of a few minutes, to ascertain the state of things in relation to cattle. The last thing before lying down, and the first thing at dawn of day, is a walk to the most exposed places of my wheat field. Need I say that this is sober *prose*, not a particle of poetry, in all this business of ploughing, sowing and watching. The author of the "Song of the Shirt" would be the man to give us the song of the wheat in its earliest stages. Yet, Mr. Chairman, there is another side to this story—a light side. There is the *poetry* of wheat-raising. I felt something of it from the moment I cast in the first handful of this *prince* of grains. The thought, like the tones of a well tuned instrument, thrilled through my bosom that I was engaged in a noble business. A business in which Paul or John might engage were they on earth, without a single twinge of conscience, or the shadow of a blush; a business, in a word, on which I could pray down a blessing from the Father of Mercies.

Is this applicable to *every* kind of agriculture carried on at the Islands? Is there no article produced here whose consumption is a *curse only*? And is the producer a friend to his adopted country? Does he give an equivalent when he exchanges the fruit of his field for money or articles of commerce?

Thus have I brought up my report of wheat-raising to the present time. None is yet ripe—none will be at the time of the Fair; but as I rode around yesterday and examined nearly every field and patch that is growing at Makawao, my pleasure was exceeding great. To see a hundred acres of wheat at a glance, waving to the winds, and this at the Sandwich Islands, caused me to bless the great Proprietor of all, and awakened the hope that I should see greater things than these."—*Extract from a Communication from J. S. Green.*

Comm.—For the best method of preparing the ground, time and manner of planting, and the subsequent treatment of this grain, your committee would refer to the report of last year as containing the best information on these points in their possession.

There is little doubt but that by ascertaining the best season for planting (which can only be done by actual experiment in each locality,) corn will flourish in every district on every Island in the group.

OATS are found to flourish well at Makawao and Kula, on Maui, and would doubtless do equally well in other favorable localities. Their culture, however, down to the present time has been too limited to furnish facts sufficient to base any well founded theory upon.

BARLEY.—This grain has been introduced, and so far as it has been tried promises to do well in our climate and on our soil."

Respectfully submitted,

WM. H. RICE.

MALU MALU, KAUAI, May 20th, 1853.

Hon. William L. Lee, President of the R. H. Agricultural Society:

SIR:—In compliance with your suggestion, you have herewith a statement relative to the cultivation of corn, at this place.

Nine acres were planted early in September last, in rows four feet apart, six grains of corn to the hill. Some shoots appeared above ground on the third day; on the fourth all were up. The weather was very favorable; clear warm days and showery nights. The corn met with no depredations from the cut worm, but grew rapidly; when two weeks old the caterpillars overrun it, extensively, and would have exterminated it, but for an active warfare waged upon them, by a force of men, women and turkeys, which thinned them, until the corn grew beyond their reach. When the blades became too coarse for their appetites, they transferred their attacks to the *core* of the stalk, where the turkies could not find them, and from whence they had to be dislodged by hand. In the fifth week, the corn was over knee high; the surplus stalks were pulled, leaving four to each hill; the earth loosened about the roots with the hoe, and the weeds kept down. In the tenth week, the corn was fit for the table.

Early in December, before all the ears had attained their full growth, a violent S. W. gale which lasted some days, laid every stalk in the field flat upon the ground, and in this state the corn was left, with almost continual rainy weather, until it was harvested in January, just four months, from planting The yield averaged about 16 bushels to the acre.

In the middle of December, a time said by people hereabout, to be a favorable season for planting corn, a twelve acre lot was planted.—The blades did not appear until the 5th or 6th day, and their growth was scarcely perceptible from day to day, until the end of January, when the whole field took a start; the weather meanwhile, having been stormy, from S. W., with much rain. The caterpillar did not trouble this field, and the cause of its failure must have lain in the wet season and want of sun, for, although, nearly every grain of corn sowed came up and attained finally a dwarfish growth, the majority of the stalks were too feeble to bear an ear. The ears that did form were not fit for eating until 16 weeks from planting, or for harvesting under 5 months. The crop was just one cart load.

On the 1st of March this field was furrowed between the rows of the standing corn and replanted; the blade did not appear until the 5th day, and grew afterwards very slowly. Much raw and cloudy weather. The cut-worm now made its appearance for the first time, and destroyed about one-half the field. The caterpillars came again and nearly finished the other half, attacking the shoots just as they came above ground and killing them so quickly as to render futile the efforts of woman and turkies against the worm. A few ears escaped and had every attention with the hoe, but were as backward in growth as the December planting, which would evidently have been the case with the whole had the worms not touched it.

This field has just been harrowed and cross furrowed; the weather is warm and favorable, and better fortune will probably result.

Early in February 3 1-2 acres were planted in a piece of low land with no better success than the attempt in December—a very backward and dwarfish growth. The yield will be very trifling. The better ears are only now fit for the table.

In the middle of April 11 acres were planted among the Kukui groves during warm, clear days. No shoots up until the 4th day. The cut-worm has destroyed about 3 acres of this field. The caterpillar has not touched it. What remains is now growing finely, and will probably yield well.

If this experience is to be any criterion, the winter months are not the ones for planting corn here. The cut-worm is to be dreaded in the early spring, and the caterpillar, perhaps, at all times during the year.

A corn-planter, imported by Mr Chamberlain, has been in use, and, one light horse and two coolies, covers 12 acres in two days, a much more rapid and satisfactory method than by hand. One man or boy is sufficient to attend the barrow, if the horse is properly broken.

A cultivator is very useful in keeping down weeds and in loosening the soil, and performs the work of a multitude of hoes in native hands.

Corn pulled in January, and kept loose in open barrels, has been free from weevils up to this time ; and corn meal ground in March is still sweet.

From this brief and imperfect experience it is not possible to say that corn is a *safe* crop for the farmer to *rely* upon ; but further trials, and a better knowledge of the proper season, may make its growth a profitable matter, if there shall be a ready market for it at Honolulu.

Very respectfully your obedient servant,

WM. REYNOLDS.

REPORT OF THE COMMITTEE ON NEAT CATTLE.

The committee appointed to report on neat cattle regret that their notice of the transactions in cattle farming of the last year, must be very meagre indeed. In fact they have nothing to say except that a very large number of cattle of all ages, sizes and qualities has been slaughtered, and that a few large lots have changed hands since they last had the honor to address the Society.

During the past year a horse and a mare have been imported ; several Merinos have been introduced from Australia, and some excellent pigs have been brought from various places, but the owners of the large herds of cattle seem to be content to go on in the old South American semi-barbarous fashion, breeding in and in and continuing steadily to deteriorate the breed of cattle here.

The large quantity of fresh meat, principally beef, consumed yearly by the whaling fleet, and by vessels touching here for supplies, is not included in any of the lists of exports, and yet it forms virtually a very large item of exported produce. As it is all paid for in cash too,

one would imagine that the graziers might find it worth their while to endeavor to produce a superior article; but numbers, not quality, seem to be the sole object of their wishes.

The committee beg to remind the graziers that the improved breeds of cattle are as fit for the market at three years old as the unimproved breeds at five and six, making a difference of two years at least to the breeder.

The milking qualities of the cattle here are of the lowest order, dairy cows not averaging over one pound of butter a week, and yielding even that small quantity during a very short period. The Ayrshire cattle are celebrated in England, in the United States and in Australia for the very large quantities of milk and butter which they yield, and they do not require the very luxuriant pastures and high feeding, which are indispensable to the short horns. The oxen of this breed are not so large as the Durhams, but will get fat and thrive in pastures inferior to those required by the Durham. From their thriftiness this breed is as well adapted for the small farmer, who endeavors to keep a few milch cows, as to the large grazier who wishes to grow beef; and the committee on neat cattle respectfully suggest to the President and to the Society, whether it would not be advisable to offer a premium for the introduction of an Ayrshire Bull and cow to these Islands. Many of our pastures are capable of amelioration, and as we have an abundant stock of cows to start from, a little care and the introduction of a foreign Bull now and then, would in a few years completely change the character of our herds; and how encouraging it is to know that no change can be for the worse.

The committee on neat cattle consider that they are not travelling out of their province, in saying a few words on the subject of horses, because the amount of available pasturage on the Islands is a matter which they are bound to take into consideration, when making their report on cattle. They would call the attention of the Society to the vast number of useless horses, which are increasing every day and consuming, in the most unprofitable manner, the food which might be better employed. Beef and hides, mutton and wool add to the wealth of the country, but the great majority of horses are not used to till

the ground, to carry burdens, or to drive cattle. They consume a vast amount of food which might be more profitably employed, they deteriorate the grazing lands, and are a main cause of the habits of laziness and vagrancy unfortunately so prevalent among the natives.

The committee on cattle would therefore (with reference to the subject on which they have been called on to report) suggest to the society whether it would not be desirable to endeavor to procure some legal enactment to reduce or keep within bounds the number of *useless* horses. The Stallion Bill passed by the Legislature of 1852 is a piece of law-making beneath contempt, as its sole object seems to be to give the Minister of the Interior the power of appointing Inspectors whose business it is to impose a tax on *such horses as they approve of*, while they have no power to impose a penalty on the parties who keep *bad* stallions, nor to order the castration of the animals. In conclusion, the committee would suggest to the graziers that every one of them should attempt, no matter on how small a scale at first, to improve our pastures by the introduction of clover and lucerne.

R. MOFFIT.

REPORT OF THE COMMITTEE ON CAPITAL AND BANKING.

At the last annual meeting of the Royal Hawaiian Agricultural Society, Messrs. E. H. Allen, S. N. Castle, R. C. Wyllie, G. P. Judd and B. F. Snow were, with myself, appointed a committee on capital and banking. Either of these gentlemen, if he would devote his attention to the subject, would, no doubt, make a report of more practical value than any that I can offer; but as my name is placed first on the committee, I suppose they consider the duty as properly devolving on me. I have, therefore, committed to paper some of the views I have taken of the matter, not offering them as the opinions of the committee, for I am doubtful whether all the committee will agree with me in every respect, and the more doubtful, as I have heretofore held somewhat different opinions myself. Perhaps some of them may commit their views to writing or express them verbally.

The report on the subject made by Mr. Wyllie, the King's Minister of Foreign Relations, at the last annual meeting of the Society, sets forth very clearly, many of the advantages of banking. As a place of deposit and safe keeping of money, a bank is a great convenience to all men who have any money to keep, and saves much labor, expense and care in the payment and transfer of large sums from one merchant or business man to another. A bank check can be written in a moment for any sum and the amount transferred without counting any money. But a bank is of great use to the poor as well as the rich, as a place of deposit and safe keeping of small sums, and the more so if it allow interest on deposits, as many of the banks of Europe do, and especially those banks which issue no bills. The deposits of all banks in good credit usually amount to a considerable sum, and though some persons are withdrawing continually, others are depositing for safe keeping or for the interest, if any is allowed. In the course of time the banker finds the amount of his deposits to remain tolerably uniform. They are of the same value to him as so much bank capital. A deposit of $10 each by a thousand different individuals is better, in some respects, than a deposit of $10,000 by one man, because the one may withdraw his $10,000 all at once and at any moment, but the thousand different depositors will not do so.

If a bank with a capital of $500,000 was established in Honolulu, as proposed by Mr. Wyllie last year, and managed by men in whom the public have entire confidence—a bank in which all the merchants and planters should keep their money—it would no doubt receive many deposits from mechanics, laborers, seamen and all sorts of people ; and these deposits would be greatly increased if the bank should pay five or six per cent. interest, which it could well afford to do while lending at 10 or 12. It would thus answer the purpose of a Bank of Savings, and be beneficial to the poor and those in moderate circumstances, while it would aid the planter and stimulate the productive energies of the Kingdom.

An assurance of a permanent dividend of 10 or 12 per cent. would bring plenty of capital from Europe, where millions are loaned at 3 per cent. or even less. Hundreds of millions of British capital have been invested in various stocks in the United States—the highest

being 7 per cent. interest. I observe in the January number of "Hunt's Merchants Magazine," a statement of the dividends by the Philadelphia banks in November last. Those dividends vary from 4 to 7 per cent. semi-annually. The stock of the Philadelphia Bank which pays 6 per cent. semi-annually, or 12 per cent. per annum, which is the lowest rate of interest here, is worth $148 for $100, the par value, or nearly 50 per cent. in advance. All we need then to procure the capital, is that we should satisfy capitalists that their money would be safe here. They are said to be proverbially timid, and well they may be, for there have been "South Sea Bubbles" aforetime, and the remembrance of them has been kept up by Spanish and Mexican loans, and by suspended dividends and Mississippi repudiation in the United States.

In Mr. Wyllie's report on Mexican finances, made Dec. 16, 1843, as agent of the English bondholders, he says it is estimated that the yearly accumulation of wealth or cash seeking investments annually, in Great Britain, averages twenty millions of pounds sterling, equal here or in the United States to $100,000,000. The 200th part of this is as much as we need, perhaps, at present; and who can doubt that with ordinary prudence in the management it would pay 12 per cent. It would often make more than this on a single bill of exchange. But it is not alone requisite that the finances of the bank be well managed; it must be located under a government capable of maintaining its sovereignty and protecting it against all lawless aggression or piratical violence. No one would take stock in a bank to be located on the Fejee Islands, though it promised to divide 20 per cent. It must be in a civilized community, where law and order prevail, and where there is a strength of police or military force to protect not only banks but all other property from spoliation by excited mobs, or by buccaneers roving the broad ocean. Two hundred years ago the Spanish coasts of the Pacific were ravaged, churches robbed, cities sacked and wantonly burned, not only by Filibusters, natives of all nations, but even by commanders holding commissions from the English Government, and this too, sometimes, when Spain and England had been many months at peace. But such times, we trust, now are passed, wherever christian civilization extends; and though it is to

be regretted that private property on the ocean is still captured by an enemy's cruisers, private property on land is generally respected in war, and banks are regarded like other private property.

A bank here can, therefore, have nothing to fear even in war from any civilized power, and should any other power ever become formidable enough to threaten the supremacy of the King's Government, the naval forces of the great maritime nations would readily be brought to his aid in a common cause, against pirates and freebooters.

It is the practice of many English and Scotch bankers not only to receive deposits and transfer credits, but also to collect bills, notes of hand, drafts, orders, &c., for merchants on each other. This is a saving of labor in a large city, and besides it seems to insure promptness and punctuality in payments, as the remissness of any debtor is directly reported in bank, and his credit thereby impaired.

A bank in good credit here would not only be the place of deposit for most of the money, but would be the medium through which all large and many small payments would be made. The counting and carrying of large sums would be obviated.

Referring to the committee of last year, Mr. Wyllie then said:— "All these gentlemen being from the U. S. are better qualified than I am to show you how banking has promoted agriculture generally, but more particularly in its two great staples, cotton and tobacco.— They can show you also the great evils arising from banking when it departs from those true and correct principles by which it ought to be regulated, and which since 1836 have been there more generally and severely felt than perhaps in any other country."

Looking back at the history of banking in the U. S., I am led irresistibly to the conclusion, that banks have not on the whole promoted the agriculture of the country, and have operated most injuriously upon its manufactures. They may seem to have stimulated the production of cotton and tobacco, but they have operated powerfully to prevent the exportation of breadstuffs and other agricultural produce, by diluting or expanding the currency and raising the practical measure of values above what it is in the countries where these productions could otherwise be sold. A dollar is a dollar nominally

every where; but an American merchant cannot pay a dollar a bushel for wheat in American bank paper, and sell this wheat at a profit in Rangoon, where eight bushels of clear rice can be had for a silver dollar, or could in 1839, when Howard Malcolm was there. Nor is a dollar in Owl Creek paper, Michigan "Red Dog," or the Arkansas Real Estate Bank, the same as a silver dollar in Guatimala, where the *mozos* or *pions* can be had for a rial a day, they feeding and lodg- themselves.

The effect of bank paper is the same on manufactures, counteracting the design of protecting tarriffs by increasing the current money cost of production. The tariffs of France, Russia and the German Zoll Verein are a sufficient protection against the great skill and cheap capital of England, because labor is even cheaper on the continent than in England, and the currency as sound. But it is very different in the United States, with vast tracts of land, independent labor and a bloated paper currency.

The evils of banking in the United States referred to by Mr. Wyllie, have certainly been very apparent and very severe, both before and since 1836. In 1837 there was a general suspension of specie payment. The next year most of the banks resumed payment, but some of them never did. The notes of such of course became uncurrent, and a great number failed in the course of several successive years, as well as some which did attempt to resume specie payments. In January, 1841, the Secretary of the Treasury reported on the state of the banks and published a list of those which had failed, but I have not been able to find the report among any papers in my possession.

I find however, in the U. S. Almanac for 1843, copied from the Exchange and Trade Register of Philadelphia, a review of the "Financial Revulsion" of 1837–42, giving a list of failures which had occurred since the report of the Secretary of the Treasury, in 1841, i. e. for two years. By this it appears that one hundred and sixty-one banks had failed, having a capital of $132,362,339, a circulation of $43,320,554 and specie $10,288,571; but of this specie the greater part was in a few large banks; the United States Bank of Pennsylvania and its branches, having near two millions and a half, and the Southern and Western State banks having the most of the remainder.

The Exchange and Trade Register published the following table of the capital circulation and specie of the banks of the United States, from 1834 to 1842.

	Capital.	Circulation.	Specie.
January, 1, 1834,	$200,005,944	$ 94,839,570	
" 1835,	231,250,337	103,692,495	$43,937,625
" 1836,	251,875,292	140,301,038	40,019,594
" 1837,	290 772,001	149,185,890	37,915,360
" 1838,	317,636,778	116,138,910	35,184,112
" 1839,	327,132,512	135,170,995	45,133,673
" 1840,	358,462,692	106,968,572	33,105,155
" 1841,	335,469,514	115,905,342	37,131,552
" 1842,	203,107,125	63,874,790	26,842,951

I may here remark that implicit confidence cannot be placed in the official returns of specie in bank vaults. About the time of making returns or submitting to examinations, some additional specie is obtained which remains perhaps only a few days. Hundreds of new banks have been established by borrowing a quantity of specie for a single day, and then returning it to be used in like manner in getting up other new banks. It is difficult to make laws in this matter which artful men will not continue to evade. The specie in these vaults brings them no interest, but the paper money they lend brings them compound interest, and they throw out as much as they dare to risk.

It will be seen that in 1840 the bank capital of the United States was over 358 milllions, while the specie in the vaults of all the banks was reported at 33 millions; near eleven dollars in paper to one dollar in specie.

What did this "bank capital" consist of? It was paper—it was *promises* to pay money on demand, on one part, issued in exchange for the *promises* to pay money in sixty or ninety days on the other part. There was not 358 millions of gold and silver or real money in the whole country—perhaps not a fifth part of it. Houses and lands, ships and factories, horses and cattle, had a real though a very uncertain value in dollars and cents; but this bank capital was a fiction. It might have been made a thousand millions by the same process, and affected nominal prices accordingly, while the absolute value of property would have remained the same. Such a currency is no standard of value. Measured by it a farm may be valued at $10,000 to-day, and to-morrow after a bank crash or panic, not bring $1,000 in cash.

On the same authority (the Trade Register) the whole amount of

specie in the United States in 1820 is estimated at twenty millions; in 1842 at sixty-four millions.

The Register thus shows up the loss by the revulsion from 1837 to 1842.

Bank circulation and deposits,	$ 54,000,000
Bank capital failed and depreciated,	246,000,000
State stock depreciated - - -	100,000,000
Company stock " - - -	80,000,000
Real estate depreciated, - -	300,000,000
Total,	$782,000,000

This does not show that the real wealth of the country had been diminished near eight hundred millions of dollars, but that the bubble of an unsubstantial paper currency had been blown up to bursting, and that thousands and hundreds of thousands had been ruined by it. No such expansions or contractions and no such losses could possibly have occurred with a currency of gold and silver.

Any great revulsion in Europe is always found to affect the United States, but it affects Siam or Burmah very little because they are not in debt to Europe and have no paper money. The exportation of ten millions of dollars from the United States whether to pay the balances of trade or otherwise, is not merely an abstraction of ten millions from the currency, but it takes away the bases on which twenty and sometimes forty millions of paper money have been issued, and which must be withdrawn from circulation to make the banks as safe as they were before. This contraction ruins debtors, throws multitudes out of employment, and greatly affects the value of property. Gold and silver have a positive value, like iron and lead. The law makes them the standard measures of the value of all other things, and stamps them as such because nothing is so convenient for this purpose; but without the stamp their value remains the same. Nothing else has been found more uniform in quantity from year to year; whereas paper can be issued by cart loads. Elasticity or expansion are no more desirable in dollars than in bushel measures. An India rubber yard stick would not be tolerated, but a paper standard of value is far more uncertain.

Before the American Revolution several of the colonies issued paper money which greatly depreciated, and the American Revolution itself was carried through, in a measure, by issues of paper,

which, though constantly depreciating, still passed freely until two hundred dollars of it were only equal to a dollar in silver. On the 31st May, 1781, the continental bills ceased to circulate as money, but were bought up on speculation at various prices, from $400 to $1, up to $1000 for $1. The whole emissions from 1776 to 1781 amounted to over 359 millions of dollars. It had long passed from hand to hand at such enormous discount, that all thought was given up of redeeming it at par, nor could there be any just mode of scaling it. It was circulated chiefly among the Whigs of the Revolution and was left on their hands. It served to achieve the independence of the country, and they were satisfied, but it was perhaps not the easiest mode, and certainly not the most equitable. It was never redeemed at any rate except what was provided under the act of 1780, at forty dollars for one, and some in 1791, at $100 for one.—The Revolutionary debt for borrowed money, was paid in full.

With the past experience of the separate colonies in issuing paper money, and of the Continental Congress during the war, it is not surprising that in the formation of a Constitution the National Convention took from the States the power of issuing "bills of credit" as well as of laying duties on imports. Both had been exercised by the separate colonies greatly to the public detriment. The former prohibiton was intended to give the general government the power of regulating the currency; the latter to make the imports uniform in all the States, and this last has been fully carried out; but the prohibition that the States shall not coin money or emit "bills of credit" has been rendered practically nugatory by construing it so as not to apply to *banks* or corporations chartered by States. These are allowed to issue "bills of credit" to a most mischievous extent.—What control can Congress have over the currency while 800 or 1000 State banks are perpetually pushing their notes into circulation with a sole view to their own profits? A well regulated National Bank, like the Bank of Hamburg, the Bank of the Netherlands, or the Bank of France, with no power to issue bills greatly exceeding its specie and bullion, and with no local banks to operate on, or contend with, would not be liable to grant expansions and contractions. Such rarely occur in France where the currency has remained compara-

tively uniform amidst all the terrible political revolutions which have distracted that country. The Bank of France was chartered in 1803, for forty years, with the exclusive privilege of issuing paper money, but it issues no bills for less than 500 francs. Consequently all small dealings are in gold and silver.

In the renewal of the charter I presume there were some modifications, for three new banks have been created authorized to issue post notes at a low interest on time and with sundry privileges, but not to issue paper for general circulation as a currency among the people. The currency in common use is gold, silver and copper.

The Bank of Amsterdam, chartered in 1659, was a deposit bank, and making it a rule to keep specie equal to its paper in circulation, it did a safe business 150 years, when it was ruined by the discovery made by the French when they entered Holland, that the bank had privately loaned large sums to the Dutch Government.

The Bank of Venice, the oldest in Europe, was chartered in the year 1171, and continued in successful operation till 1797, when the Republic was finally subverted. It received deposits of bullion and coin, and issued so few bills that they usually commanded a premium over other current money.

The Bank of England has a great number of local banks to compete with. The effect is, in a more limited extent, the same as the United States. It has several times suspended specie payments by consent of Parliament. One of these suspensions was continued from 1787 to 1821. In 1814, 1815 and 1816 no less than 240 country banks in England stopped payment, and 89 passed under commissions of bankruptcy.

A few of the new States of the American Union have set out with the determination to have no banks, and some by suppressing notes of small denominations; but they have always found the bills of other States, small and large, poured in upon them, giving to banks and bankers out of the State the profits of the circulation; and in the end have nearly all yielded to the demands of their own people to have banks of their own. Some of these States have recently gone further and passed free banking laws. From these I apprehend much mischief. These free banks are required to pledge stocks of the general or State government as security. This is their only real capital. Of

course the owners get the interest on the stocks, and then again get interest on their bank loans, besides borrowing freely of the bank themselves when they can make good speculations. The double interest and other facilities will multiply such banks as long as stocks can be obtained, and thus the *debts* of the States and of the general government will become the most available banking capital. In like manner bank stock has in some States been pledged as the capital of Insurance Companies, and dividends drawn from both: a business which goes on smoothly in fair weather, but which having little more than a paper basis may all be swept away by the first monetary tempest. The storm or the conflagration may carry banks and insurance companies together into the yawning gulf of bankruptcy.

Returns published in London exhibit the condition of these principal banks in Europe on the 1st January last.

Bank of England.—Circulation,		£21,871,581
	Coin and Bullion,	19,765,621
Bank of France.—Circulation,		£27,441,563
	Coin and Bullion,	19,997,920
Bank of Vienna.—Circulation,		£19,494,395
	Coin and Bullion,	4,321,736

The deposits and other liabilities are not given here nor their debts due, as my object is to show how their specie compares with their paper in circulation. The Bank of Copenhagen is the only bank in Denmark, and the Bank of Hamburg one of the best in Europe, but I have not the returns of these.

The great bank explosion of 1837, was not the first which occurred since the adoption of the Constitution, in 1789. In 1814, in the interval between the old U. S. Bank in 1811 and the new one in 1817, all the banks south and west of New England suspended specie payments, and did not resume them until February, 1817, at which time by order of Congress, none but the notes of specie paying banks were received in payments of public dues. During this time silver nearly disappeared except in New England. The suspended banks increased their issues, and paper bills of all denominations were issued by corporations, traders, tavern keepers and all sorts of people, from $5 down to three cents, much of which was current only in the neighborhood where it was issued, and was worn out in the pockets of those who received it only because they could get change in nothing else. Not much of the specie went out of the country at that time,

because the war interrupted the foreign trade. European goods were but little imported, so that foreign debts were not incurred. The specie went to New England, or was hoarded and sold at a premium for particular uses. In the absence of foreign goods domestic manufactures were commenced and greatly increased; but after the peace in 1815, the foreign goods came in like a deluge, and notwithstanding the Tariff of 1816, which was designed to pay the war debt and protect the domestic manufactures, the heavy imports filled the public treasury, while at the same time they exhausted the country of its specie and prostrated the American manufactures. The excessive issues of bank paper both by the national bank and the swarm of local banks so altered the standard of values and raised the prices of every thing in the United States that foreign goods could be sold at a great profit; the American manufactures failed; the foreigner had possession of the market, and the country became exhausted of its specie, for the foreign merchant did not take the bank paper which had so diluted or expanded the currency and enabled him to override the Tariff of 1816; he took the specie on which the paper currency professed to be based, and left the paper without any stable foundation. Hence some banks failed and others contracted their issues to avoid a like catastrophe. The country was in a condition of great embarrassment. The new U. S. Bank went into operation with a nominal capital of $35,000,000 but only $1,200,000 in specie. It was found necessary to send an agent to England to buy specie. The bank borrowed about eleven millions in Europe and the West Indies at a cost of half a million in premiums, but while it was coming in at this great cost, not less than twelve millions were going out from Boston and other ports to pay the balances of trade. In 1820 the whole amount of specie in the country was estimated at twenty millions, while the paper currency was nearly ten times that amount.

In the debate in Congress on the bill to charter another U. S Bank in 1816, Mr. Calhoun estimated the "bank notes, credits and bank paper in one shape or another" at two hundred millions. These paper expansions operated then as they did again in 1834-'35-'36-'37, to fill the public treasury by heavy importations of foreign goods at the sacrifice of the domestic industry of the country, the exhaustion of its species and the consequent bursting of the paper bubble as

already described in 1837-'42. With a specie currency, a very moderate rate of duties on foreign imports would be a sufficient protection to American agriculture and manufactures, but with great bank paper expansions, duties of 50 per cent. are on many things inadequate to overcome the difference between the cost of production in the United States and the cost in Europe with expenses of importation added. The difference is not only a serious obstacle to the American manufacturer, but it is equally effectual in preventing the American farmer from sending his products to the countries from whence the manufactures come. It was supposed that after the repeal of the British corn laws the wheat, flour, corn and provisions of the United States would go to England to supply her deficiency. But such does not prove to be the fact. The cotton and tobacco of the United States go to Europe because they cannot be had in sufficient quantity and equal quality elsewhere, but the breadstuffs needed by the crowded population of England are obtained not from the United States but from Russia, Prussia, Poland, Hungary and elsewhere in the north of Europe, where the cost of production is less than in the United States.

A paper currency on these islands would have the same effect in checking the production of sugar for exportation, for although it takes money to establish a sugar plantation, a cotton mill or an iron foundry, if money be so plenty, whether in coin or paper, as to raise the prices of labor, real estate and other property to a high figure, the cost of production will be so high that the product cannot be sold in other countries at a profit. The great redundancy of coin must have the same effect upon prices as a redundancy of paper, but is not liable to the same losses and the same sudden contractions and expansions under which vast amounts of property are sometimes sacrificed at forced sales, and thousands of business men are ruined.

Great Britain is the richest country in the world. For nearly a century the amount of the exports of her industrial products have regularly exceeded her imports. The balance is due her in specie, and if this were all thrown into circulation on the little islands where it is earned it would probably raise prices at home so that she could no longer sell her manufactures abroad as she does now, and the sources of her constantly increasing wealth would be cut off. But her money is not so thrown into circulation at home. It is expended

by her fleets and armies in all parts of the world; it is expended in her colonies; has heretofore been paid in subsidies to foreign allies in war, and is now lent to foreign governments, states, cities, corporations &c., wherever it will bring interest in any part of the world. Some of it is thus lost by bad debtors, but on the whole it brings in many millions of interest money, which still further increases the wealth of the nation, to be again invested in like manner. A little of it could be used to advantage in the Sandwich Islands by means of a bank; but it will be readily inferred by this time that I concur entirely in the conclusion of the report made by Mr. Wyllie last year that this bank should not have the power of issuing notes as a currency payable on demand without interest. It would have ample sources of profit, through interest on its cash, without receiving interest on its *credit*; be far safer for the public; have a better effect on the productive industry of the Islands, and be much more likely to obtain the confidence of the real capitalist, while it would repel the mere speculator in stocks. He who obtained loans from it would not need to carry off a mule load of specie, but would obtain a credit at the bank on which he might draw his checks.

With the golden sands of California on one side, and the auriferous treasures of Australia on the other, there can no longer be any need of paper here, nor any where, unless in very limited quantities and large denominations as a currency in common use; as there are now no banks of issue on the Pacific coast of America from Cape Horn to Sitka, it seems well to set up none here. It will be easier to keep paper banks out than to get rid of them when once they have obtained foothold, for they cannot be closed suddenly without ruining all debtors and causing a great convulsion in the monetary affairs of a country where they have a large paper circulation.

The work of substituting gold for paper must be done gradually, but it ought not to be long protracted in the United States, while more than fifty millions of gold a year are received from the diggings of California. Much more than this is dug from the earth in California, but a large portion of it goes direct to England, France, Germany, Mexico, Chili and China.

The annual products of the gold mines of California, Australia and the Ural Mountains in Siberia seem likely to be for some time not less than one hundred and fifty millions of dollars a year, and may be

more. I find it stated in "Hunt's Merchant's Magazine," for January, that the ascertained yield of the Melbourn mines to the 31st July last amounted to 53 tons weight, or in exact federal value to $25,312,800, at the Sydney mines to $12,500,000, and at Adelaide $5,000,000—total $42,812,000.

The amount of bank paper in circulation in all Europe has been estimated at £189,214,278 sterling, or $946,071,390; that of the United States is supposed now to be $170,000,000, and daily increasing. This last might be supplanted by gold in three or four years, but it is much more probable that what gold does not go to Europe to pay for imports and to pay the interest on American stocks held abroad, will be made the basis of further issues of bank paper, swelling the amount up to 200,000,000 or more, and ending sooner or later in another explosion like that of 1837.

The same Magazine from which I have quoted contains the following table:

BANK CAPITAL, CIRCULATION &c. IN THE UNITED STATES.

Year,	Capital,	Loans and Discount,	Specie,	Circulation,
1842	$260,171,179	$293,957,000	$28,449,800	$83,734,000
1843	228,661,000	254,544,000	33,615,000	58,563,000
1844	210,872,000	264,905,000	49,898,000	75,167,000
1845	206,045,000	268,617,000	44,311,000	89,608,000
1846	196,894,000	312,114,000	42,032,000	105,552,000
1847	203,070,000	310,282,000	35,122,000	105,519,000
1848	204,832,000	344,476,000	46,369,000	128,506,000
1849	207,309,000	332,323,000	43,619,000	114,743,000
1850	217,317,000	364,204,000	45,379,000	131,863,000
1851	229,084,000	412,710,000	51,907,000	153,968,000

By the annual statement of the Secretary of the Treasury made up to January 1851, it appears there were 737 banks and 128 branches, of which returns had been received at the Treasury Department. The returns of capital &c. are given above, besides which it appears they owned of stocks $23,306,847, of real estate $18,860,395, of other investments $12,398,898, and that they were answerable for deposits to the amount of $129,076,082. Add their deposits to their notes in circulation and they owe the public $283,034,470, to pay which they have near 60 millions in specie, and the debts due from borrowers to the amount of $412,719,315, besides stocks, real estate &c. There are ample funds as long as bank paper is current, but should it cease to be so the banks could neither collect their debts nor pay out their deposits; all the specie in the United States, and there is more now than there ever was before, would be insufficient to redeem the circulation and pay the deposits of the banks.

"Hunt's Merchant's Magazine" estimates that $100,000,000 have been added to the specie of the country within the last three years. This strikes me as an over-estimate. The total amount of gold coined at all the U. States Mints for 1851 was $59,588,653. I find by the "National Intelligencer," since received, that in 1852 the total coinage of gold was $56,846,187; silver $999,410; copper $50,630; but the coinage of 1850 was only $31,981,733 in gold, and 1,866,100 in silver. In 1849 it was $12,243,175 in gold, and 2,366,288 in silver. From 1793 to 1849 the whole amount of coinage at the U. S. Mint was 162,182,409—averaging less than three millions a year. The recent great increase is of California gold, and a large part of this appears to be going to Europe as fast as it is coined. The following table will show how this is done, being the imports and exports for the last three years, ending June 30, 1852:

IMPORTS INTO THE UNITED STATES.

	1849-50	1850-51	1851-52
Foreign Merchandise,	$173,509,521	$210,771,429	$207,940,101
Foreign Specie and Bullion,	4,626,792	5,453,503	5,262,643
Total Imports,	$178,136,313	216,294,932	212,502,744

EXPORTS FROM THE UNITED STATES TO FOREIGN PORTS.

Domestic Produce,	$134,900,333	$178,620,136	$149,861,911
Specie and Bullion,	7,323,004	22,465,752	42,5.7,285
Foreign Merchandise,	9,475,453	10,302,121	17,204,036
Total Exports,	$151,696,790	218,388,011	209,573,232

From the above it appears that the exports of Specie and Bullion from the United States in three years have been $72,496,041

The Imports, 15,344,938

Balance Specie Exported, $64,151,103

In the same three years, the coinage at the mints has been, $151,832,842

Deduct Specie and Bullion Exported, 64,151,103

$87,681,739

The addition of *specie* in three years is not one hundred millions as stated in the Magazine, but 87 millions. This however, is a vastly greater increase than ever occured before. There however, besides this may have been an addition of gold dust and bullion uncoined of of several millions more; but on the other hand the exports of American specie would have been greater than they have been, had not American stocks been sold in Europe in the same time, the amount of which for the single year 1852, has been estimated as high as thirty millions. This is only another form of incurring debt. The debts incurred by the state authorities alone amount to about two hundred millions, not all held abroad; but besides this there are stocks of

American railroads, cities, corporations, &c., &c., held in Europe to a large amount, probably far exceeding all the specie in the United States. The interest on these stocks added to the balance of trade, if the imports and exports go on as they have done for the last three years, will carry to Europe three-fourths of all the gold derived from California. And if the States go on multiplying banks as they now appear to be doing, the revulsions of 1836 to 1842, of 1809-'10 and 1814 to 1824, may occur sooner than is expected, notwithstanding all the restless activity, the indomitable energy and vast resources of the American people, who need only a sound unfluctuating and solid currency, and a system of imports wisely adapted to protect domestic industry while it secures the necessary revenue, to be the most prosperous nation in the world, scarcely affected at all by the revulsions, fluctuations or panics beyond the Atlantic Ocean.

I hope I may be excused for dwelling at such length on the banking and financial affairs of the United States. The commercial connection between them and these Hawaiian Islands has long been intimate and must continue to be so. Your legislators should be prepared to adopt what is useful and show whatever is mischievous in the example of the United States as well as of other countries. That banks are useful and convenient there can be no doubt, but these advantages are far more than over-balanced when they are allowed to put their own notes without interest into circulation and become the current money of the country on which they receive interest. Those banks which are in dishonest and imprudent hands always issue the most paper, and the others put out as much as they dare. The more they issue the higher the prices of lands, labor and merchandize rise; importations of foreign products increase, and these carry off the specie while the paper only remains in circulation. Merchants, to get gold and silver to pay their foreign debts, draw hard on the banks; these in alarm suspend their discounts and call in their debts; their debtors cannot pay, and if the banks weather the storm at all, it is only by inflicting great distress on the community. The property of thousands is sold at half its value; debtors, to keep their heads above water, pay two or three per cent. a month for money, and only sink the deeper, until grown desperate they become reckless of their obligations. If the banks generally and by concert, suspend specie pay-

ment to save their debtors or themselves, then notes pass at a discount and prices of goods are made to correspond. If one travels with these notes in his pocket he will have to go to a broker every 50 or 100 miles and pay five or ten per cent. for other bills, or a still greater per cent. for specie, and will find many left on his hands that are utterly worthless. The resumption of specie payments cannot be made without a severe contraction of the paper currency, which has a ruinous effect upon all who owe money. Prices of all kinds of property, inflated by the false or paper standard of value, fall down again even below the true hard money standard.

In 1814, the State of Pennsylvania chartered over forty new banks, and put nearly all of them in operation with very little gold or silver. Before the year was out they all suspended payment as did all the banks out of New England in the course of twelve months following; but these banks continue to issue their paper in vast sums. When the effort was made to resume specie payment in 1817, it caused distress and utter prostration of business, more severe, protracted and ruinous perhaps, than the subsequent revulsion of 1837, because the latter was relieved by a bankrupt law and importations checked somewhat by the Tariff of 1842, which relieved American manufactures, and thus checked the demand for specie for exportation.

To show the effect of these revulsions of the paper currency upon prices we quote from the report of the Committee of the Senate of Pennsylvania a statement of the prices of lands at different towns.—The same farm in the rich old county of Lancaster, which in 1809 were sold at 75 to $100 per acre, rose in 1814, under the bank expansion, to $250 and $300 an acre; and in 1819, under the resumption of specie payments, fell again to $50 and $70 an acre. The fluctuation was as great in other counties. Kentucky and other States passed laws to suspend the collection of debts. Great state banks and real estate banks were created, whose notes were made a legal tender, and universal embarrassment prevailed. American Statesmen ought to learn wisdom from the history of those times, and arrest a system whose constant tendency is to run into great excess, perpetually vaccilating and destroying all uniformity in the standard of values.

A very limited issue of paper by a bank on these islands would be very convenient, but it is not necessary, and I deem it to be altogether safest to allow of no issue of paper money.

Happily the matter is now fully within the control of the government of these islands. It is not so under the government of the U. S. There an uncontrolled multitude of chartered banks, and banks acting under authority of free banking laws of the several States, are all busy in putting paper money of all denominations into circulation. In no other country does such a state of things exist. The best mode of correcting the evil is a debatable matter; whether by commencing with the suppression of small notes, or otherwise it is not necessary to enquire here. No reform can be effected without great and persevering effort. Powerful interests must be encountered. But no such difficulties stand in the way here. You have only to profit by our bitter experience by giving the system no foothold on these islands.—Indeed I trust that no paper money will find currency either on the islands of the Pacific, or on the continent this side of the Rocky Mountains.

REPORT OF THE COMMITTEE ON LABOR.

LIHUE PLANTATION, May 31st, 1853.

To Geo. E. Lathrop, M. D., Chairman of Committee on Labor:

MY DEAR SIR:—I have nothing new to communicate on the subject of labor. We continue to like our Coolies; the number is now increased to 41; and though the additional ones are generally men from Honolulu discarded as bad characters by those from whom we obtained them, yet they have given satisfaction as laborers, and with but one exception, have given no serious trouble. One of them, a Coolie employed for A. B. Bates, Esq., and for some time in his service, in a fit of rage against some of his companions set fire to the house in which they were sleeping, which was burnt to the ground.—He was tried in Honolulu and sentenced to 2 years imprisonment, being convicted of arson by a jury.

As laborers in the field, the Coolies give us perfect satisfaction.—They are industrious, skillful and thorough, and one Coolie in a cane field is worth in my opinion three natives. But among themselves, they are quarrelsome and passionate and have many dangerous fights. One of our number is now laid up by a deep stab through the fleshy part of his thigh, which an inch nearer would have severed the main artery and been fatal. The wound was inflicted by a butcher knife lashed to a pole, their favorite weapon in the many playful squabbles in which they so often indulge.

At Koloa, the sugar boiler, a foreigner, was severely injured by a blow on the head inflicted by one of the Coolies in a passion, at some distasteful order given him. The punishments in China are so barbarous and severe for even light offenses, that the Coolies here seem to think that the legal penalties which the island laws inflict, are mere trifles.

I hope that a sufficient number of persons may be found at the annual meeting, who are desirous of obtaining more Coolies, to warrant the fitting out of a vessel for the purpose.

The want of labor is still the greatest obstacle with which large plantations have to contend, and I believe no better method than the above to obtain laborers can be devised.

Yours truly,

J. F. B. MARSHALL.

REPORT OF THE COMMITTEE ON BUTTER AND CHEESE.

As the Chairman of your committee is absent and I have not time for an extended report, I shall confine my remarks mainly to things of a practical character, in regard to dairies at the Hawaiian Islands.

1st. Cows.—The breed of the cow is of great importance in butter making, as both the quantity and quality of milk of a good cow are very superior to those of a poor breed. But the habits of the cow are no less important than her breed. Take the best breed of cows ever known and turn them out on these plains unguarded, un-

heeded and unmilked, and in ten years their progeny will be wild, if not ferocious, and their desirableness for dairy cows will be at an end, until by taming and training, their progeny are again domesticated.

Many of the cows on the island of Oahu are of a very superior stock for the dairy. Let their feed be good and abundant and their habits cultivated, and we may have as much milk and of as good quality here as any where.

But in order that a cow of a good stock may fully develope her qualities, she must be at home, and in a happy condition, having a plenty of good food and good water, near at hand, must be devoid of fear from dogs and hogs, and savage men; and, when brought to the yard to be milked, she must feel fully assured and yield her milk with pleasure to the gentle hand of her milker. That this may be the case, requires a process of domesticating and training, from the time the calf is born until it becomes the cow to be milked.

But how unlike to this is the fact in relation to most of the cows now milked in the Hawaiian Islands. If the mother was ever milked, the calf commences being trained by being half starved and daily pelted on the nose with a club or stones, to her injury and to the great annoyance of the mother. The calf is then turned out to run wild two years, more or less, until she brings forth her first progeny; when perhaps she is brought up to be milked. But, very likely, she hides her calf two or three days and during this time the young cow is left unmilked—because the milker says he can get no milk without the calf. At length the calf is found, the young cow is then lassoed and brought up to a post and tied by the head, and her feet are tied fast together. Now the attempt at milking is commenced. The cow is tickled or pained, or affrighted, or all together. Then commences storming, scolding, kicking, thrashing and perhaps pelting with stones on the part of the savage milker. The cow, on her part kicks and and strains and thrashes about, and falls perhaps half choked, and is left unmilked, the bag being caked; or, if any milk is obtained, the major part of it is left in the bag, because, on account of the fright of the cow, a perfect collapse takes place in all the lacteal vessels.—Fear overcomes all sense of distension or fullness in those parts. The

young cow thus frightened and abused comes up to the post the second time with little less fear than at the first. Nothing but the presence of her calf and the sense of its drawing upon the udder can induce the cow thus vexed and frightened to yield up her milk. But the better part of it, that is the last, is still retained for the calf.

Thrashing, storming, tying head or legs or both, is the discipline that the cow is destined to undergo be her disposition what it may.—No sympathy is secured between the milker or the herdsman and the cow; consequently to obtain all her milk, or the best of it, is impossible. Mend the habits of the herdsman and the milker, and accustom the cow to go contentedly without her calf in an enclosure and you have taken the first and that a very important step in getting a good dairy.

2. The next thing is to give the cow good food and plenty of it, with good water, and salt weekly, in case she has not access to salt water. The cow that has to travel one or two miles to her food can not give as much nor so good milk as the one that finds her feed nearer home, as she has less time for resting and absorbing milk from the food, and the milk thus formed being heated by the journey will be less rich and oily.

3. The locality of the dairy is of material importance in butter making at these islands.

In New England where an even temperature is desirable and the two extremes of heat and cold are to be avoided, a room under ground or over a spring is preferable. But at the Hawaiian Islands a free circulation of air, a good breeze even, passing through the dairy is more important than a few degrees reduction in the temperature. In a common cellar the thermometer varies scarcely a half of a degree from 76° during the 24 hours, while in an airy stone house it varies five or more degrees each side of that point. Let the dairy be well ventilated, and if it be requisite to place it upon a hill to get a fresh breeze, this is more favorable to the rise of cream and to the hardening of the butter than a shady, damp, cool valley, from which the wind is excluded. This will correspond with the experience of all dairymen, that cream never rises so well in a damp close day as when the sky is clear and the air fresh.

4. Neatness is essential to the dairy. Neatness must begin with the milking and exist in every step of the work till the butter is packed away for use. Lack of neatness, in any one of a half a dozen things, may injure if not ruin what would otherwise be good butter.

Good milk will keep in Honoluln, if not disturbed, 24 hours without becoming sour, in case the milk is placed in a cool airy place, where there is no sun. But if the milkers hands are filthy, or if the dish into which he milks is not perfectly cleansed and scalded, or if the strainer or pan lacks cleanliness or sweetness, or if the milk be disturbed in the pan, or if the cow be milked when fatigued or heated, either one or all of these circumstances will cause the milk to sour in less than 24 hours, and will consequently unfit the cream for making good butter.

5. CHURNING, &c.—In the opinion of some the cream should be churned immediately after being removed from the milk. This may be well when the amount of cream is sufficient to make it an object.—But if the cream is kept in an airy cool place and well stirred morning and evening, it may be kept two or three days without injury to the flavor of the butter. The churning should be done early in the morning, if practicable; and the cream being kept in a stone or earthen jar should be reduced to as low a temperature as can be produced in this climate by placing wet towels around the container during the 12 hours previous to churning. If the cream is stirred a little in the evening before churning, and kept as cool as may be over night, the work of churning in the morning will be quickly performed; and the butter-milk will be easily separated from the butter. The work of extracting the butter-milk from the butter is ordinarily performed in New England by the hand, but in this climate, the heat of the hand would melt the butter and defeat the object intended.—This work of seperation must be performed by a wooden stick or some other implement made for the purpose; and should never be attempted except in the coolest part of the day, in this latitude.*

* The butter should be thoroughly worked and packed down the morning after it is churned. Washing the butter is not recommended, as it cannot improve its flavor, if neatly made; nor increase the ability to seperate the milk from the butter if it be kept cool during the 24 hours of the churning.

The container in which butter is to be deposited should be either stone, earthen or white oak. Tin corrodes and nearly all kinds of wood impart an undesirable flavor to the butter. The amount of salt requisite for butter is not less than one pound to 20 of butter, nor over one and a half to that amount of butter, varying somewhat in accordance with the length of time you wish to keep it. A little nitre, say one ounce to twenty pounds will not injure its flavor, but improve its quality for keeping. Respectfully submitted,

J. S. EMERSON.

REPORT OF THE COMMITTEE ON THE VINE AND FIG.

To Rev. T. E. Taylor, Chairman of Committee on Vines and the Fig:

DEAR SIR:—As Chairman of the Committee on the Vine and the Fig, I presume you will report on the general subject—that you will give the Agricultural Society an account of all the varieties of both which are found in the islands; especially of the new varieties of the vine said to be introduced on the island of Oahu; of the comparative value of the different varieties, for the several uses to which we may put them—also the best modes of cultivating and managing them, so as to make them profitable. All these topics, belonging to the general subject, I will leave to you, and also the adaptation of our soil and climate to one or another variety of the vine and fig, or to all of them. My connection with the committee must be because of my residing on the plain of Lahaina, which has become somewhat famous for its luxuriance in grapes; and so I will confine my remarks to our own place, trusting that they may perhaps be of some use to the public.

The whole plain of Lahaina is formed by soil, which has been washed, during many generations, from our lava mountains. This is the only source of our soil, except that a moderate amount of vegetable mould must have gradually mingled with the lava ingredients; and along the line of the sea beach, it is mingled with the coral lime sand, thrown up from the ocean. Only two streams run from the mountains over this plain, neither of which reaches the ocean except

in the time of rains. Except in the time of flood, they are spent in watering the innumerable kalo patches, which cover the great part of Lahaina.

All kinds of cultivation are carried on by irrigation only; but vines and and trees, which root deep are doubtless watered by streams which run under ground, from the mountains. One such stream comes out near the north end of Lahaina, at the shore, about at high water mark. There must be many others, in different parts, mingling themselves more or less with the soil of the plain. The surface of the ground, most of the year, is too dry for common vegetation, except when irrigated. But, eight or ten inches below the surface, it is always moist, so that it never fails to bear a heavy crop of weeds; and vines or trees never need watering after they have once taken root. Permanent wells of fresh water may be had in any part of the plain, by digging ten or fifteen feet deep.

The only kind of grapes cultivated, hitherto, at Lahaina, are the large purple grape seen in different part of the islands. In fact, they are almost the only kind we have seen at the islands. How valuable this grape is compared with others I am not prepared to say. It is not so sweet and delicate in its flavor as the white Madeira grape.—That it is a valuable kind would appear, from the fact, that it is said to be cultivated extensively, in all parts of Europe and America, where the climate is adapted to its growth.

This vine was probably introduced into Oahu, from the Spanish Main, by Manini, about the year ——. Mr. Richards planted slips of it about his house, at Lahaina, about the year 1827. The same stocks which he planted are still standing, and growing as thrifitly as they ever were. If properly attended to, they still bear as rich and abundant fruit as they did when we first enjoyed it in 1835. Some of these vines are 6 or 8 inches in diameter at the base; they reach over the two story house and over other buildings. Perhaps the extreme length of some of them may be now 100 feet, and if all the branches which have been cut off, in 25 years, could have been measured, it might be found, that a single stock had produced miles, in length, of branches.

In planting vine slips, the first year, they need frequent watering

and much attention, as they are liable to be injured in a variety of ways. After that, if in a good situation, they grow rapidly, and in some cases, would probably yield a crop of grapes in one or two years. Formerly we supposed, that the grape slips should be watered the first year, with mountain water only. But that would not seem to be necessary. A neighbor of ours the last year, planted several slips within 25 or 30 feet of the ocean, and almost on a level with high water. They were watered from a well only 20 feet from the ocean which must be somewhat brackish. The vines as they grew, were trained up the south side of a building, and in five months from the time the slips were planted, they had reached the length of forty feet and more. It is worthy of note also, in this case, that the soil in which these vines were planted, was not merely the common soil of Lahaina, but was mingled with a still larger proportion of the sand of the ocean.

One thing seems established by our observation, and that is, that vines never do well in the vicinity of large shade trees. They will almost disappear from an end of an arbor which happens to be shaded by a kukui tree. Some of our kukui trees have attained a considerable height, and have nearly ruined the vines which are partly shaded by them. Occasionally a vine climbs some tree in its wandering, but it grows very indifferently in that situation, and seldom bears any fruit. Probably our large fig tree will prove still more destructive to the vine. They will not only cut off the power of the sun, but will more than any other tree monopolize not only the nutritive properties of the atmosphere, but of the earth also. So far then as my observation goes, at Lahaina, there is no situation in which vines grow so finely, as where, with a free circulation of air, they have for the whole day, without interruption, the full blaze of our burning sun; and its fruit will never come to perfection in any other situation. Even the leaves of the vine itself are too much shade for its fruit to gain a rich flavor, and a real vine-loving Cape-de-Verdian is often seen cutting them off. In regard, however, to some of our vines, we have two objects in their cultivation. The fruit is the least of the two. A far more important object is the grateful shade they make about a dwelling, and the coolness they add to the dwelling itself, by covering the roof. The shade

they afford is the more valuable, inasmuch as it is most dense, during the hot months of the year, when it is most needed.

On the subject of trimming, it is doubtless known to all, that vines will not flourish, nor can we expect any fruit from them, or any that is good, unless they are thoroughly trimmed every year. The time of trimming, one year, should be governed, in some measure, by the time they were trimmed the year preceding. There are, however, at Lahaina particular reasons, why we should never trim vines earlier than the first of January; and if left later than the first of April, it will prove an injury both to the vine and the fruit. The trimming of our vines operates precisely like the breaking up of winter in higher latitudes. As soon as the vine is thoroughly trimmed the buds begin to swell; the new and tender branches filled with clusters, shoot forth everywhere, and grow with great rapidity. In four months from the time of trimming, we have the first ripe grapes. Where we have several distinct vines, in order to prolong the season of grapes, we are accustomed to trim one the 1st of January; a second, the 1st of February; a third, the 1st of March, and to finish the remainder, the 1st of April. By this means, we may have ripe grapes from the 1st of May to the end of September.

For many years the mission families alone, at Lahaina, raised grapes. But, for a few years past, vines have multiplied, among natives and foreigners, in every part of the place. A few of the white Madeira grape have been planted; but they have not had time to show how well they will thrive. Natives of Lahaina supply the market there with the purple grape, and often carry them to the market at Honolulu. Having thus far given our own experience in the culture of the vine, I should stop, were it not that there is an important question which ought to be answered by somebody. It is one which should be investigated by those who have had more acquaintance with vine growing than I have had. For fear, however, that the subject will not have the attention it deserves I will make a few remarks upon it.

With a soil and climate adapted to the vine, why is it that so few places on these islands enjoy this delicious fruit? Why are other islands in this ocean equally destitute? When I was at Tahiti, in 1835, I was told there was not a grape vine in the Society or Georgian groups of islands. We may see reasons why, in many places, the

vine cannot be cultivated. But are there not many places in this group, where, with a proper mode of culture, the vine would flourish which have not yet been tried? The soil of Lahaina is essentially the soil of all parts of the Hawaiian Islands. It is said that volcanic soils in almost every part of the world, have been found well adapted to the vine. Where it is mingled with sand, as along all our shores, it will no doubt be improved for this purpose, as it is for almost every vegetable and tree that is grown. The vine flourishes under the burning heat of our shores. But that degree of heat may not be essential to it. I have seen the finest grapes and produced too in great abundance, at Kuapehu, on Hawaii, above Kaawaloa. It is a mile and a half inland, and at an elevation of, certainly, not less than 1,500 feet. My impression is, that many of the vine growing regions are of great elevation. The rule for choosing ground for a vineyard, in all parts of the world, whether north or south latitude, is, that it face the noon-day sun. Some degree of warmth is doubtless needed; but perhaps the strong and glaring light is as essential to the vine and its fruit, as is its heat.

If I were asked what made Lahaina well adapted to raising vines, I would say,

1st. It has a deep soil. This is very important, if, according to Virgil's rule, the root must stretch as far towards Tartarus as the top does towards heaven. This would point to our plains and vallies, as the places for grapes. But sometimes a deep soil is found high up the sides of the mountain.

2d. Our soil is always moist a few inches beneath the surface.—This supercedes all necessity for irrigation after the first year. If the earth lacks a natural moisture beneath, it must require a vast amount of irrigation to make the vine flourish.

3d. Another circumstance, of still more importance, is, that from the 1st of April to the last of September, which embraces most of the growing season of the vine, we seldom have at Lahaina, any wind, except the gentle land and sea breezes. Strong winds are the greatest enemies the vine can have. It cannot be made to flourish, on a spot where the trade winds blow constantly and in full strength. This is easily understood, if we consider, that the new branches which shoot out after trimming, are very tender; that, in this climate, they grow

with great rapidity. With us, they often stand up six, eight and ten feet before they show any signs of being woody; and they are easily broken with the wind. We must remember too, that these new branches are the only ones that bear the fruit, and they are the only ones, which in the succeeding year, send forth fruit—bearing branches; so that if many of them are broken, it is not easy to see how the damage can be repaired. These branches will never grow *thrifty*, if they do at all, where they are constantly whipped by the wind. A single hour of strong wind at Lahaina, while the vines are growing, throws them all into mourning. At Waimea, Kauai, where the trades prevail, at times, moderately I should judge, Mr. Whitney succeeded in raising vines, by enclosing them in high adobie walls. The Missionaries of Molokai, in their moderate trades, have done the same, by building, to the windward of the vines, a high barricade, which is thatched with grass after the manner of the native houses.

I know of no other advantage which Lahaina has over most places on the islands in raising grapes, unless it be its perpetual sunshine which has been mentioned. So far, therefore, as our observation goes, we should expect that the grape would flourish, in every part of the islands, where there is sufficient depth of soil, not too dry, well exposed to the sun, and where they are protected from the trade wind, during the milder portion of the year. Some have suggested the idea of planting groves which should be profitable for fuel, perhaps for fruit, and at the same time afford the necessary protection to a vineyard.

On the other branch of our subject, namely, the fig, I shall have little to say.

The bush fig, so called, has long been growing at Lahaina, as it has been in most parts of the islands. With us it has had no care, and its fruit has been of little account. About twenty years since Mr. Richards planted a fig tree of the common kind on his premises; but it was in an unfavorable situation, and never came to much. About six years since slips from it were planted in both the mission yards, by the wives of the Missionaries. Having the best maternal care, they grew rapidly, reaching in three years the height of 25 feet.—Some of them are now between 30 and 40 feet high, and not much less than a foot in diameter at the base. They yield one crop of rich and luscious fruit in a year, an abundant one too. The branches

trimmed from half a dozen trees will do not a little towards filling up the wood pile. The house wives too, pronounce the wood to be first rate for the purposes of cooking. But we are beginning to doubt the economy of raising such trees. Our doubts arise from the aristocratic character of the tree. In whatever corner placed, the tree, by its branches, its roots and offshoots from the roots, soon comes to occupy the whole yard, like a game cock, turning all other things out. I estimate that half an acre well set with these trees would furnish a family with fuel for the whole year, and fruit for half the town. But it might occupy half the time of one man to trim them, and if the upper growth were kept within limits, on the sapping and mining principle, they would soon take effectual possession of neighboring lands. Several at Lahaina, have lately planted the cuttings of what are called Turkey and China fig, which are said to be more humble and modest in their growth, and to yield an abundance of richer fruit.

Yours respectfully,

D. BALDWIN.

MR. PRESIDENT:—After reading the very able and full report of Mr. Baldwin, from Lahaina, on the Vine and Fig, I feel some hesitancy in presenting any thoughts of my own on this subject.

If the alluvial soil of *Lahaina Lalo* was a fair specimen of the adaptation of the soil of these islands for the cultivation of the vine, there would be no question as to the facilities for producing the grape in great abundance here; but every old resident upon the islands, knows, that Lahaina stands prominent, in this particular, above any other spot in the group. Hence in inquiring how we may best cultivate the vine in the region of Honolulu, we need to make provision for overcoming many obstacles, which are not encountered in its cultivation at Lahaina.

1st. In the greater part of Honolulu proper, we believe the depth of soil varies from one to four feet, probably the average would not differ much from three feet, and this is rather a close and heavy soil, than a light and sandy one. So we think the soil itself is not that, in which the vine flourishes best. But a greater drawback is perhaps to be found in the fact, that the soil in many places rests upon a bed of coarse black sand or decomposed lava, so open and porous in its

nature that it will not retain the moisture that comes down to it through the overlaying soil. Thus with the penetrating rays of a tropical sun from above and a sieve-like substratum of sand beneath, it is strange that vegetation of any kind flourishes as well as it does. It is found by those who have given careful attention to this subject, that the roots of the vine will not strike deep nor run very far in a horizontal direction, provided they can find plenty of their appropriate nutriment near at hand; hence if we can supply the vine with its proper food, by means of manures, we can in a great measure overcome the drawback of a soil dried on the surface and drained at the bottom.

On the subject of manures, two things are chiefly to be regarded.—The character of the substance employed and the method of applying it; both of which should be modified somewhat by the character of the soil in which the vine is planted. On this subject I beg leave to quote from an able English writer, on the cultivation of the vine, where he says, that the great object to be secured in the application of the manures to vines, is, "to impart to the roots the highest degree of nourishment, combined with the greatest permanency of duration; and adds; that of this description of material are bones, horns and hoofs of cattle, bone dust, the entire carcasses of animals, cuttings of leather, woolen rags, feathers and hair; and of liquid manures, urine, soot dissolved in water, the clearing of dung heaps, soap suds and every description of liquid refuse that proceeds from a dwelling house or habitation."

Of all the above enumerated manures, it is generally admitted that bones are the best. In their decomposition they seem to furnish just the kind of food upon which the rootlets delight to feed. Any one, who has a vine growing, can easily satisfy himself on this point, by depositing some bones near the roots of his vines, sufficiently buried to retain a proper degree of moisture, and at the end of six or nine months, (if the vine is in a flourishing state,) by carefully removing a portion of the crust from the bones, he will perceive how the roots run to them, and fatten, and how the little fibres penetrate the small crevices of the bone, inside and out.

The superiority of bones over all other substances as manures for the vine, seems to arise from several causes. One is that the decomposed bone furnishes the right kind of nutriment. Another is that it

decomposes so gradually, as to furnish a constant snpply. So that there is not that danger of an overgrowth as in the stimulating effect of liquid manures; nor that necessity for disturbing the roots by replenishing the soil, as in cases where a less permanent material is employed.

If I might venture humbly to suggest the best method of preparing a vine bed, either where the vine has been already planted, or is yet to be planted, (in the region of Honolulu,) I would propose something like the following:

Make an excavation of the earth, within one foot of the vine, in a circular form if convenient, if not, in a straight line, let the soil be thrown out to the depth of two feet, for a distance of five feet in length and three feet breadth, being careful to keep at least one foot of close soil between the bottom of the excavation and the black sand beneath. Then fill in one foot of this excavation with the following substances: bones, the fresher the better, let some of them be cracked or broken, unless the bones of smaller animals can be mingled with those of larger ones, small pieces of bricks, small porus lava stones the size of a hen's egg, old shoes, old hats, India rubber, dogs, (being sure that they are dead,) having all the above filled in with fine dirt made up of the soil thrown out, the sweepings of a public street, and fine manure. The next foot of the excavation may be filled up with the soil taken out, united with fine manure and an occasional sprinkling of black sand. The surface of this bed should not be planted, but be kept clear of weeds and grass, and rendered loose by an occasional stirring to the depth of five or six inches. The object is to keep the upper foot of soil in such a state that the rays of the sun can easily reach in its effects the second foot, and thus help to fertilize the material, which is to constitute the chief source of nourishment to the vine. It may be objected that this requires a great deal of labor.—True it requires some labor and more care, but when it is once done, it is done for fifteen or twenty years, all except keeping the surface clear, and it will cost but little more to make this provision for ten than for one vine, provided they are pretty near together. Nor should we expect to escape the general condition of mankind in the acquisition of good things, as expressed by the Ancients, "that the Gods give nothing good to mortals without labor."

In the location of vines in this vicinity, all other labor will be lost

unless great care is taken to shelter them from the stormy trades. A man with diseased lungs is hardly more sensitive to the cold air, than the growing vine to the rude winds. The evil does not seem to consist merely in the bruising of the unguarded and tender parts, but the winds seem to penetrate the very life of the plant. I have myself observed that a few hours of stormy wind at Lahaina, stopped the growth of a flourishing vine for several weeks. The subject of pruning is too ramified in its nature to be entered into at length.—Without care on this subject there may indeed be a flourishing vine, but there cannot be much fruit, and what there is will be of an inferior quality. On the general subject of pruning, an English author has the following simple rules, which seem to me entirely applicable to this country:

1st. "Always cut upwards, and in a sloping direction."

2d. Always leave an inch of blank wood beyond the terminal bud, and let the cut be on the opposite side of the bud.

3d. Prune so as to leave as few wounds as possible, and let the surface of every cut be perfectly smooth.

4th. In cutting out an old branch, prune it even with the parent limb, that the wound may quickly heal.

5th. Prune so as to obtain the quantity of fruit desired, on the smallest number of shoots possible."

In planting new vines, it is common, and perfectly natural, that the planter should desire to obtain fruit as soon as possible, but it is nevertheless true, that this haste makes waste in the end. The young vine is often encouraged to bear before it has acquired sufficient strength to bring the fruit to maturity. One result is a very imperfect quality of fruit; where this does not appear the first year it is very apt to the next. Another effect is that the vine is so weakened by the effort to produce before it was able, that its growth is retarded, and not unfrequently the vine itself pines away and dies.

The best directions I have seen in regard to the capacity of a given vine to produce fruit are found in a carefully arranged table, on this subject, by the writer already referred to, where he gives it as the result of a great variety of experiments carefully taken, that no vine should be permitted to mature fruit until the circumference of the

among them, the evils that are likely, nay certain to result from this partial and imperfect system of re-peopling the islands will be readily perceived. The laboring population instead of being permanently benefited will suffer a serious injury. The licentious and indolent habits of the natives will prevent their working while they can obtain the means of subsistence in any other manner—disease and death will consequently do their work with inconceivably greater rapidity than they have hitherto done to the speedy extinction of the aboriginal race.

The adoption of the only means which I can discover of arresting the impending evil, would in my opinion, be productive of benefits to the country as great in proportion, as its rejection of ultimate calamity and ruin.

The measure I would propose is the importion of women as well as men from China.

The first question which offers itself in connection with this scheme is: What are the advantages that would result from such a measure? In reply I would say: first, a good supply of domestic servants would be obtained; secondly, a certain number of females can always be profitably employed on plantations, in making mats and bags for packages for produce, and at a variety of other light work; thirdly and principally, by encouraging their marriage with the men already introduced, and others who may hereafter be brought. Vice, disease and consequent loss would be prevented; it is besides probable that the whole of the people so introduced, would, when the term of their servitude was expired, find it to their interest to become permanent settlers on the islands.

The next question which presents itself is: Is the scheme practicable at a moderate expense? I have no knowledge as to the inclination of the Chinese women to leave their countries. By some of the Coolies whom I have questioned on the subject I have been told that the women would be glad to come, and by others that they could not be induced to come. This question should be answered before any active steps are taken, and would be most satisfactorily answered at some of the ports in China. We already know the cost in one or two cases of the introduction of men, and I should think by making differ-

ent arrangements, the cost for introducing the women could be reduced to a much smaller amount.

The third and last important question is: At whose cost should they be introduced? To this I would reply, that as the measure is proposed to benefit the entire community, by the community should the burden be borne. The necessary funds can be raised without imposing one additional dollar of tax, and the very means that I should recommend to raise them would be an additional benefit to all classes of the community. It is well known to most persons who are in the habit of travelling about the islands, that there are hundreds of thousands of acres of land entirely uncultivated, and from which their owners receive but a mere trifling, if any return.

Now the measure I should propose is, that periodical auction sales of Government lands should be effected, and the proceeds applied to the purpose in question, for which a small annual sum would suffice. The women upon application for their services, should, under certain rules and restrictions, to be complied with under bond and penalty before indenture, be distributed where they might be required, but especially in those districts where their countrymen are settled; they should be required to work for a certain period of time for their food, clothing and a small stipend, and upon its expiring they should be free. By this means foreign capital would be invited into the country, large quantities of land now of no service to any one would be brought under cultivation, and the rapidly decreasing population of the islands would be recruited by a healthy and industrious race of people.

It may perhaps be objected that as the individuals requiring the services of the women would be the most benefited by their introduction, they should be at the sole expense of introducing them. To this I would answer: men alone can perform the labor required by agriculturists, and the object of introducing the women is not so much to add to the immediate supply of labor as to secure the future prosperity of the islands by introducing a new element of population which may re-invigorate the native race, or if the latter be so effete as to be incapable of restoration, supersede it.

I may say that I consider it as much the duty of the Government to

supply, if possible, the deficiency in population, as it is to build a new court house or bridge that may be required; and that if a few individuals for their own purposes and on their own responsibility, introduce a new race of laboring men into the community, it devolves upon the Government, having the means at its disposal, and taking into consideration the decreasing population of the islands, to introduce an equal number of women of the same race and class, and by so doing to perfect the inceptive efforts of those enterprising individuals, and make their undertakings permanently contribute to the general good.

G. RHODES.

REPORT OF THE COMMITTEE ON SEASONS.

To E. G. Beckwith, Esq., Chairman of Committee on Seasons:

DEAR SIR:—I am not sure that you need or desire aid in preparing your report on seasons. Still I think it not improbable that you would consult your fellow committee, could you see them, especially as you have not long resided on the islands, and, if I mistake not, have not visited other islands of the group than Oahu. With some of the committee you may have had opportunity of confering; but as I do not expect to attend the meeting of the Agricultural Society, I take the liberty of committing to paper and sending you a few suggestions which you may use at your discretion.

I have no meteorological observations to offer you, as I have not the means of watching them with accuracy. You can easily imagine that the temperature of the islands, though remarkably even, varies somewhat according to different localities, height of lands from the sea, prevalence of trade winds, &c. At Makawao I have seen the thermometer a trifle below 50 degrees, and Haleakala, our noble mountain which rises 10,000 feet above the level of the ocean, submits yearly to a cap of genuine New England-like snow. This she sometimes wears a week or more at a time, though she commonly doffs it in a day or two. A series of crops of snow as we sometimes have them, indicates as the natives think, a season of fruitfulness.

The seasons, though they have a general resemblance from year to year, are by no means so stereotyped as to admit no variety, and to require no judgment as to the time of sowing and planting. Commonly from about April 1st the rains are "over and gone;" and the season is delightful till November. Other seasons, like the present, are more wet and cold. Since April, 1853, we at Makawao and and Hamakua, have had rain nine days in ten, which has retarded the growth of wheat and other grains, and made it well nigh impossible to do business in the shape of farming or other out-of-door work. I do not however, apprehend any serious loss in wheat or any other vegetable production, in consequence of the abundant rains. Indeed while I was beginning to feel anxious on account of the crops, and was beseeching God to look upon the "bow of promise" and remember His "covenant" with the earth, one of my people said to me in reference to the rains, "we think this is the beginning of the millennium."

Seasons at Hawaii are, on the whole, much in accordance with the division made by the Great Proprietor of all in the time of Noah—"summer and winter, seed time and harvest." They however, *lap* over or *dovetail* into each other, so to speak, more decidedly than in more northern latitudes. This may not perhaps abate the pleasantness of the seasons, but it is the cause, I think, of failure of securing as good crops as would be secured were the seasons more marked.—In northern latitudes the farmer has a short time only for planting his corn, beans and potatoes. He must be awake at *the* season or he loses all. But here, one advises to plant in November, another says February or March is the proper time, while another still thinks April or even May will do as well. Amid all this conflict of opinion, one puts off till the last moment, and then looses all by the cut worm. Where we can obtain a sufficiency of seed of all kinds, it will be an obvious duty to be "in season" and there will be no harm if we add the other part of the exhortation—viz: "out of season." The late Mr. Locke of Waialua, Oahu, who was a model of industry and enterprise, acted on this plan, if I mistake not. When he lost a field of young corn or beans by the cut worm, or from an unfavorable season, he threw in the plough and planted again. His perseverance,

if it did not enable him exactly to conquer all difficulties in the business of successful cultivation of the soil, enabled him to make additional advances in the road to success; and if he had been spared, would have enabled him to conquer many of the difficulties which encompass the path of the agriculturist at the islands. Would that we had a few men of the stamp of Mr. Locke in every district on the islands; under God, they would effect a change as cheering as beneficial.

Seasons at Hawaii! Need I say Mr. Chairman, that in this respect we are highly favored, and at the same time are partially exposed to temptation, and need to be exceedingly watchful and industrious. Allow me to dwell briefly on these circumstances and duties.

We are, in regard to the climate, highly favored. Well may we say as did an ancient worthy, "The lines are fallen unto us in pleasant places; we have a goodly heritage." So far as climate is concerned, few countries, if any, equal the Sandwich Islands. God has done his part to make it the garden of the world. As an ordinary arrangement, think of the number of sunny days we have in the course of the year. And yet lest His creatures should faint beneath the scorching rays of the sun, He has provided a wind of a most remarkable character, to fan almost constantly, our fields and gardens, enter our windows and ventilate our parlors, dining and sleeping rooms; while yet He saves us from the tornadoes which destroy the fruits of industry in other countries of nearly the same latitude. And in those sections where the trades do not reach, there He who remembers that we are dust and need His constant care, furnishes the sweet sea breeze by day and the cool but gentle land breeze by night as a kindly substitute. And what country has a brighter moon, than our adopted one? or stars that "burn around her" with an intenser glow? or planets that more emphatically spread "His truth from pole to pole?" All these, and others which I need not mention, constitute the Hawaiian Seasons concerning which you Sir, are to report. If any one shall suggest or think even that I paint the seasons too highly, let me add that if the multitudes who have tasted the sweets of an Hawaiian climate, and spent, if only a few, of its delightful seasons

here, and who have then changed their residence for the United States, I have scarcely known one who has not longed intensely to return to the islands. Why this, unless we have charming seasons? Exemption, if temperate in all things, from wasting sickness, and from many ills which affect most persons in colder climates, freedom from excessive labor, and from the mortification and distress arising from *duns* and *law-suits*. Why, my dear Sir, one could well nigh be eloquent in speaking of the charms and advantages of the seasons at the Sandwich Islands. And I cannot but add that our bounteous Creator, in giving us such seasons, would kindle our gratitude—draw out our best, our holiest affections, and fasten them on Himself—would secure our highest services on earth, and thus prepare us for the enjoyment of Himself in that world where all seasons are swallowed up in one, and that perfect and eternal. And yet, strange as it may seem, our charming seasons may become a fearful source of temptation. They are so to the Hawaiians. They induce indolence. Indolence is making them effeminate; keeps them poor and vicious, and in a word is destroying the natives. They need the corrective influence of winter. The frosts of December would teach them effectually, what they cannot now learn, to wit, that they must work or die. Now they can make a shift to live, though they neglect to sow and plant; and the poorest of them can ride his own horse.—The seasons of a single New England year would either change the Hawaiians to an industrious race of men, or would whiten the fields with the bones of horses and cattle. I have sometimes almost wished that the people who seem so little affected by all the appeals I can make to induce them to become industrious, could have a taste of a Northern winter.

But Hawaiians are not the only ones to whom our charming seasons become a source of temptation. Men from Europe and the United States are affected similarly. They find that they can obtain a certain kind of a living by toiling a small part of the time. Why should they submit to the tug of labor when they can *live* without it? The actions of many declare plainly that they will do no such thing! Others there are who can by no means consent merely to vegetate, rather than work. They scorn to descend to the calabash and eat

with dogs and swine. But they feel the enervating enfluence of the climate. True they could a obtain a comfortable living by moderate work, but they desire to be *rich*. Hence, they quit the plough, the spade, the sickle, the work bench, and go into this and that speculation. As a consequence, they often fall into temptation and snares and into many hurtful lusts. If such has not been the experience of many a man among us, then my senses greatly deceive me. And the danger to-day is as great as ever. Hence the importance of *watchfulness* and *industry* to turn the advantages of Hawaiian Seasons to the highest account.

Am I extravagant in asserting that the members of the R. H. A. Society are placed in the Providence of God in circumstances peculiarly favorable for exerting a very powerful and happy influence?—Who have we as members of this Association? His Majesty, King Kamehameha III. has by permission, been declared to be the patron of the Society, and the Prime Minister of the King and all the high chiefs are members. We have all the Ministers of State, Consul General, U. S. Commissioner and Consul, and the Consuls for all foreign nations with which the King has formed a treaty. We name the Judges of all the Hawaiian Courts; lawyers, physicians, merchants, mechanics, planters, teachers of schools, and ministers of the gospel, and perhaps I should add, gentlemen at large. Here then we have nearly all the intelligence, the wisdom, the industry, the common sense, the tact and the benevolence on the islands. Not to attempt to complete or weigh these attributes and attainments, allow me to say that, in my opinion, they are very respectable, and if circumstances would allow, they may be turned to a high account. And where are we I ask? On one of the most charming spots, so far as the Maker is concerned, on earth. A spot that might be the first that shall realize the glowing prophecy of the Poet—a spot where

> ——— "the reproach
> Of barrenness is past. The fruitful fields
> Laugh with abundance and the land, once bare,
> Or fruitful only in its own disgrace,
> Exults to see its thistly curse repealed.
> The various seasons molted into one
> And that one season an eternal Spring.
> The garden fears no blight and needs no fence
> For there is none to covet, all are full."

Here then we are placed in the Providence of God, to exert what influence we may be able to exert, in filling this our island home with the fruits of industry, of intelligence and holiness. The King begins

according to the Constitution, the Patron of the Society, the Prime Minister, some of the chiefs also, and others of the people being fellow members, we have a duty to perform in reference to the Hawaiians, chiefs and people, in relation to the soil from which we all draw our sustenance. The duty which we owe them is, to awaken them thoroughly to the importance of becoming fellow laborers with us in filling the land with cultivated fields, and pleasant dwellings; with good roads, and bridges across their rivers; with school houses, and houses for the public worship of God, with wealth, intelligence, peace, purity and happiness.

Now let me repeat the question. Are not the members of the R. H. A. Society placed in favorable circumstances for exerting a most powerful and happy influence? Yes, my dear Sir, and confident am I that if each member would do his whole duty both by precept and example; would be self-sacrificing; toil for the nation instead of laying up treasure for his children; teach the chiefs and people to be industrious, temperate, and pure; would cast in his lot with them, and bequeath to them his children; would labor to make this his adopted home, the very garden of the Pacific; the model islands so far as cultivation, and roads, and pleasant villages, and schools and churches are concerned; in a word, if each would determine that he would leave no measure untried to secure the present happiness and the endless good of this nation, then *all* would ere long find occasion for unfeigned thanksgiving for so interesting a sphere of usefulness.—All too, would realize a reward of the richest character—worth more than untold gold—a reward in exemption from the corroding cares connected with riches—from the empty enjoyments of a life of pleasure, and from the intolerable satiety of a life of indolence—the rich reward of a sweet consciousness of having done good in our day and generation, of having filled up our days with duty and usefulness.

The present, if I do not mistake the signs of the times, is the season for laying the foundations of future generations of Hawaii, and of the numerous isles that stud the mighty Pacific. Once we said that God had placed us at the outer border of His creation, at the ends of the earth. He has now shown us our mistake. We are exceedingly central. Few spots on the broad earth are destined to be of more importance than this little group. Let us then be awake to our duty and privilege of making it the happy home of our children, and our

children's children; the happy home also, of those to whom God gave it, so long as He shall continue them a distinct independent nation—which may He long do—the happy home, finally, of the stranger and sojourner who shall visit our shores for business or pleasure. In laboring to effect all this, do we not need to be *watchful* and *industrious*? God grant that the members of the R. H. A. Society may show themselves equal to the exigency of the times—may so fill up their short and uncertain season of toil, that they may enter upon and enjoy with the highest zest, the season of eternal rest.

Yours, in behalf of the Society,

J. S. GREEN.

REPORT OF THE COMMITTEE ON ROADS, HARBORS AND INTER-ISLAND NAVIGATION.

Since the formation of this Society, there has been constructed 902 feet linear, of tolerably substantial truss bridging, on good stone (dry laid) abutments; all of ample width and over streams of the most difficult passage—the lines of the greatest travel throughout the islands. This work has been done, mainly, by Government.

The amount of simple bridging your committee are unable to state, but the total length far exceeds that of the truss bridging. Some has been done by Government, but most of it by the annual road tax.—The latter is not always of the most substantial kind, but answers temporarily its purpose.

Your committee feel bound to acknowledge that the results in road making under the present system have equalled their highest expectation. From no roads at all, at the organization of this Society, there have been constructed about 150 miles of carriage road and about 450 miles of bridle road—not always of the best kind, but passable.—The necessary bridging only is now required to render them complete and travelable at all seasons.

Your committee look with pleasure upon the changes made in the road law by the Legislature, hoping that the low commutation therein provided will supply the means for the speedy completion of the

necessary bridging, which could not otherwise be obtained, except directly from the Government treasury.

As the system of electing annually new Supervisors, is considered a false and an injurious one by the best authorities on the subject in other countries, your committee regret that it is still continued here. The new law which the present Legislature has ameliorated was, and for the present is, a violent one, but perhaps under the circumstances no better one could have been devised that would have accomplished so much.

Your committee are sorry to state that there have been no improvements of our harbors since the organization of this Society, with the exception of two wharves at Honolulu and a part of a breakwater at Lahaina. The "condition of our harbors" is a subject of such vast importance to the prosperity of this kingdom, that your committee feel it a special duty to urge this Society to use its strongest influence with his Majesty's Government in making "improvements therefor." It has been ascertained from actual examination by one of your committee, that the harbor of Honolulu can be increased nearly one-third its present size by a judicious system of dredging.—As it is the principle port of resort for shipping of a rapidly increasing commerce, we would urge immediate attention to its enlargement, as well as to the improvement of the present available port which is fast filling up.

It is the received opinion that the kingdom of Hawaii possesses but few safe harbors for shipping. This is true, if perfect safety at all times is implied—but the important fact that there are scarcely ten consecutive miles of sea-coast at any one part of the islands but what anchorage or a landing can be effected almost every day in the year—is not so well known. This fact will become more apparent as the wants of the people in the different localities require the aid of commerce.

Our Statute laws authorize the erection of a Light House on Kakaako Point on the east side of Honolulu channel, whose slumbering light, your committee confidently predict, will rise and shine, to the infinite delight and benefit of all concerned so soon as the means are provided.

The filling in of the reef that makes off from the Fort in Honolulu, and the building of a new wharf for the accomodation of bulky and

heavy freights, is very much needed; and your committee are glad to perceive that the attention of the present Legislature is being given to this important subject.

"Inter-Island Navigation" is a subject which your committee feel some delicacy in "suggesting improvements therefor." It is well known that the number of vessels engaged in the trade are more than what find adequate support. Perhaps they receive from the business and travelling community all the support they deserve, for they are, with few exceptions, of the most wretched description.

This state of things, your committee believe, is owing to the absence of all law prohibiting unseaworthy vessels from running, and the spirit of our navigation laws which bear so heavily on all Hawaiian vessels desiring to go foreign. Your committee believe that the enactment of a law in accordance with the above suggestions would be the means of drawing into our trade a better class of sailing vessels.

Your committee, as well as the community at large, feel keenly the want of steam vessels in our coasting trade; and we believe the time has now arrived when such an enterprise can be carried into successful operation. The Caloric engine affords a cheap motive power, and the certain establishment soon of a foundry and machine shop in Honolulu, does away with all contingencies in regard to the repair of machinery. The great obstacles heretofore in the way of such an undertaking are now removed. The project now set on foot by the people of Honolulu to introduce a steam vessel into our coasting trade, your committee have good reason to believe will be accomplished; and if managed with a small degree of prudence will prove remunerative to the stockholders.

Respectfully submitted,

T. METCALF, *Chairman.*

KAALAHA, June 4th, 1853.

To the Chairman of the Committee on Roads:

SIR:—As a member of the Committee on Roads it is to be supposed that I will endeavor to assist you in framing your report, and I really feel considerable difficulty, circumstanced as we are, in making any suggestions that are likely to be of use.

The present roads on this island, except those in the vicinity of Honolulu, are generally as bad as nature, assisted by art, can make them. I speak more particularly of the road through the Koolau district, in which I reside, which runs a good deal through swampy land, and is formed of the mud thrown up from each side, and thus in wet weather becomes of the consistancy of three finger poe. The bridges, (by courtesy,) for grating would be a more proper name, are generally so narrow and frail that every time a person on horse-back passes over one of them he is astonished at finding himself across without broken bones, or a ducking at least.

It is unnecessary for me to say anything on the present waste of labor in the endeavor to make hard roads where the material is carried along at the ends of a stick or in a calabash.

I am in some hopes however, the new road bill of this session will put a little more hard cash into the hands of the Road Supervisors, and that, properly applied, will enable us at least to have bridges, which, in all cases of swampy land, I would recommend, should be built of wood (pine or other durable timber,) as being cheaper, and if well painted and pitched may be calculated to last 10 or 15 years, before which time I hope that the agricultural resources of these islands will be so far developed that their renewal will be a small matter.

If we once had good bridges we could then either hire wagons or buy them and gradually, filling the worst places first, attain such a state of perfection as will enable a wagon to leave Honolulu by Diamond Head and return by Ewa.

Another thing—Road making not being a mere matter of instinct, it ought to be the duty of the Superintendant of Public Works or other skillful officer to see at least to the bridge building part of the work, otherwise great loss will be sustained from their inefficient construction and misplacement. I am Sir, yours, &c.,

WM. WEBSTER.

LETTER ON THE SUBJECT OF GUANO.

FOREIGN OFFICE, June 1st, 1853.

To the Hon. William L. Lee, President of the R. H. Agricultural Society:

SIR:—Among all the *manures* for the recovery of exhausted earth, and for enriching poor soil, I believe the first place is now given to "Guano." Knowing the warm interest that you take in the promotion of Hawaiian Agriculture, I confidently submit to you the following extracts from communications addressed to me by Thomas R. Eldridge, Esq., the King's Charge D'Affaires, in Lima:

From a letter dated 27th Oct., 1852.—"It would be very interesting to me to know if the guano left at Honolulu by the "Harpooner" had been sold, and at what price, and if the Agriculturists of those islands would purchase this article at $2,50 per quintal, and in what quantity, The importance of this manure must be well known at the islands; in small quantities, perhaps it might be introduced there, with good results."

From a letter dated 5th Dec., 1852.—"I am very anxious to know if anything can be done with guano at the islands; you must have observed the favorable reports of it from every country, where it is used; lately it has been tried by the tobacco planters in Cuba, with great success, increasing the crops ten-fold and improving the quality. It is now being sent to the Mauritius for the sugar estates; in this country (Peru) it is used by the sugar planters with success. I hope some of the "Harpooner's" cargo may have been tried on some of the farms on the islands; if the farmers can afford to pay $50 a ton for it, I can make a contract with this Government to supply them with as much as they require."

From the same letter, on Salted Beef.—"I have observed that your graziers talk of salting beef. This is a staple article in this market, if it is good and will keep, and may be shipped to Callao, with prospects of good results. At present it is worth $20 per barrel, but the price usually ranges from $10 to $12, and salt sells at about 28 to 20 cents per quintal at *Huacho.*"

It may not be out of place, here, for me to add that Edward Beyerback, Esq., the King's Consul General for Chili, wrote to me from Valparaiso, on the 15th Sept. 1852, that there was a demand for the

Distilleries there, of sixty or eighty thousand gallons of molasses, at 25 cents per gallon; and again on the 9th February last, that the price was 26 1-2 cents per gallon.

If you think these particulars important enough to be laid before the Society over which you so worthily preside, you are welcome to do so; and I beg leave to add the same in regard to the two samples of Hawaiian wool which I enclose herewith. I received them only yesterday, from Mr. Edward Sparkes, of Waimea, Hawaii, with a letter dated 3d May.

With much respect, I have the honor to be Sir,

Your most Obedient Humble Servant,

R. C. WYLLIE.

P.S.—You know, of course, that the quintal is 100 pounds Spanish.

In 1842, Messrs. Gibbs, Crawley & Co., of Lima, sent a few bags of Guano by the schooner Denia. I gave part of it to the late Wm. Paty and to others, but never obtained any report on its effects.

R. C. WYLLIE.

REPORT OF THE CORRESPONDING SECRETARY OF THE MAKAWAO AGRICULTURAL SOCIETY.

To the Hon. William L. Lee, President of the R. H. Agricultural Society:

My Dear Sir:—You will see on reading the minutes of the last meeting of your Society, that certain individuals on each principal island of the group, were requested to use their efforts to form local societies, auxiliary to the R. H. A. S., on their respective islands.—Being one of this number, I have to report the formation of the Kula, Makawao and Hamakua Hawaiian Agricultural Society, and as Corresponding Secretary, I beg leave to state the facts, few in number, and in themselves of small importance, pertaining to agriculture in this district, and to address you in behalf of the infant Society.

At your last meeting, in the Report on Wheat Growing, which I had the honor of presenting, I remarked that the people at Makawao

had lately formed an Agricultural Society. This was little more than nominal, though I trust it was like the breaking up of the fallow ground—a great deal of effort being necessary to make even a beginning in this work among a people so rude in their method of husbandry. We have since re-modeled the Society; and some things we have done, I am happy to say, which look in the direction of agriculture.

During the last year and since the formation of our Society, more lands have been purchased in Kula and Hamakua, than in any other previous year, and I think than all previous years since the Government began to sell lands. The obtaining of the right in fee simple, to the soil, lays the foundation of all successful agriculture. Men will not act without something in the shape of a motive; Hawaiians need a powerful one. They must own, bona fide, the land on which they live or they will do little in the shape of cultivation. Hence the efforts which the friends of the people have been making of late years to induce the the Hawaiian Government to sell, at a low rate, a small piece of land to every man who wished to purchase. Hence also the efforts which have been made to persuade the common people to wake up to the importance of securing each a small farm—a home for themselves and children. To me it is a matter of unfeigned thanksgiving, that so many of the poor, and till quite lately, *landless* Hawaiians, have obtained lands for themselves and for their children. I know you will rejoice with me for the favor of God and the favor of the Government thus shown the Hawaiians. They will no longer have the shadow of an excuse for refusing or neglecting to cultivate the earth.

In Hamakualoa, where quite a number of the people have lately purchased lands, Mr. Gower, with whom they do their business of this sort, tells me there is a good deal of industry in seeking the means of paying for little farms. At present, many are busily employed in making fish nets, as these are in much demand and bring ready money. When they shall have paid for their lands, I trust they will cultivate them, and develope the resources of that fine country.

In Kula the renewed demand of late for the Irish potato has called forth the energies of our people in that region, and has made money more plenty than it has been since 1850. Mr. Gower has received a

much larger proportion of the pay for the land which he sold to the Honuaula and the Kula people than he expected he could possibly obtain. I have strong fears however, that the people of Kula will be mere raisers of potatoes and potato merchants, rather than farmers of the Yankee fashion.

At Makawao there has been a beginning made in the raising of wheat. One native Hawaiian has 10 acres of fine looking wheat, and two others have an acre or two each. Two of these would have had four times as many acres could they have obtained seed. This is "the day of small things," but it is not to be despised. If nothing shall befall these 12 or 14 acres, there will be more wheat taken from them than the whole Hawaiian nation has produced up to this year. If the owners take good care of it, there will probably be enough to sow 200 acres in 1854. In other respects some of our people are increasing in industry, and if we can be let alone for a half a dozen years—undisturbed by the democracy of the United States, which in its far-reaching—not to say, *over*-reaching—benevolence, aims to annex all creation, there will be ground to indulge a faint hope that some portion at least of these islands, will be converted into fruitful fields, on which will rise pleasant dwellings, and schools and churches.

I therefore address you Mr. President, and through you the members of the R. H. Agricultural Society, in behalf this feeble branch. In doing so I "open my mouth for the bunch," for could our Society meet with you, no one of them would be able to listen understandingly, to your addresses, nor engage with you in the discussions of the parent Society. I therefore entreat you to feel the deepest interest in making the Hawaiians an agricultural nation. Unless it becomes such as a nation, i. e. unless the great body of the people cultivate the earth habitually and cheerfully, I do not think the nation as such will long survive. I therefore desire you and all the members of the parent Society to instruct the Hawaiians, chiefs and people, as you are able, in the duty which they owe themselves and their nation relative to the cultivation of the soil. Let all who can do so, connect themselves with the local auxiliary societies which I hope to hear, have been formed at all the Missionary Stations on the islands since

your last meeting. Make addresses at their quarterly or monthly meetings, encourage the most intelligent of the people to examine agricultural subjects, and to make addresses at their own meetings. Encourage the branch societies to vie with each other in raising produce and cattle, and to get up annual fairs, to exhibit also at the fairs of the parent Society. In a word, do all in your power to arouse the nation from the lethargy of ages, to feel the importance of becoming an intelligent, industrious and happy agricultural people. Teach them also, I beseech you on their behalf, by example. O, my dear Sir, did you ever think how extremely cheap is good example? And yet how powerful! If consistent, 'tis well nigh irresistible. True, the example of the laborious farmer costs him often a weary frame, and an aching head. He may have a rough, hard hand and a brown face, and must submit to the inconvenience of coarse apparel and soiled garments. But all this is well nigh infinitely more comfortable than the state of the idler with all his finery and starch, and airs.— But it may not be necessary. for you all, or for many of you to exchange the broad cloth for the *tow* garment, or even for the coarse cotton one. But I think it would do you all immense good occasionally to doff the broad-cloath, and lay hold of the hoe or the spade, or the shovel. Who does not need the glow of health and the flow of spirits which such an occasional half hour's employment would create? Show then *the example.* You would dignify labor and make it honorable in the sight of the Hawaiians who have no such examples in their rulers and important chiefs. Thus in serving yourselves in promoting your own happiness you would serve others, do good to a poor but interesting nation.

But my dear Sir, I may not neglect to say in this connection, that we greatly need more examples of regular, practical, every-day farming. The nation suffers exceedingly for want of example of this sort. I am not about to institute a comparison between the merchant, the merchant's clerk, the lawyer and physician on the one hand, and the farmer on the other. But I raise the inquiry, what can be done to furnish the people with examples of industrious farmers? They have example of speculators, and multitudes are rushing into speculation. They have examples of lawyers, and the danger is eminent

that half of the youth in the nation will become lawyers, and set every man's hand against his neighbor, until the land is filled with broils and contention. But where are the farmers in this and that district of the islands, who shall be content with a moderate number of acres, but who shall be satisfied with nothing short of the very highest cultivation of which the land is capable? God all gracious and long-suffering send us—not sugar planters, for we have a sufficiency of these for the present, and besides, the people cannot imitate the erection of sugar mills and the successful manufacture of sugar; not the cultivators of tobacco, for as you have heard Mr. President, or will hear from the minority report on that miserable weed, scarcely a greater curse can be inflicted on the land, scarcely a worse example be given the people than the cultivation by foreigners of tobacco—but send us men who shall have a genuine passion for farming; who shall hold on until the cultivation of the soil shall be honorable, and the entire group shall be filled with the fruits of industry, intelligence and holiness. Yours, in behalf of the

Makawao Agricultural Society,

J. S. GREEN.

LIST OF PREMIUMS,

FOR THE ANNUAL SHOW AND FAIR TO BE HELD AT HONOLULU, ON TUESDAY AND WEDNESDAY, THE 6th AND 7th OF JUNE, 1854.

CATTLE.

Class I.—Imported Stock.

1 Best Imported Ayrshire Bull, $20 or Silver Cup.
2 " Ayrshire Heifer or Cow, $10 or " "
3 " Devon Bull, $20 or Silver Plate.
4 " Devon Heifer or Cow, $10 or Silver Plate.
5 " short horn Durham Bull, $20 or Silver Cup.
6 " " " Heifer or Cow, $10 or Silver Cup.
7 " Hereford Bull, $20 or Silver Plate.
8 " " Heifer or Cow, $10 or Silver Plate.

Class II —Native crossed between Imported and Native Cattle.

9 Best Bull, $10 or Silver Cup.
10 " Cow, $10 or " "
11 " one year old Bull, Diploma.
12 " " " Heifer " "
13 " yoke of Working Oxen over 4 years old, $5 or Large Medal.
14 " Milch Cow, $10 or Silver Cup.

The cow to be kept on grass only.

The time of trial from 1st of May to 1st June.

Statement to be furnished containing, 1st. The age and breed of the cow and time of calving. 2d. The quantity of milk in weight and also of butter during the trial. 3d. The butter made to be exhibited with the cow at the fair, and the statement to be verified by affidavit of competitor and other persons conversant with the facts.

15 Best fat Ox over 4 years old, $5 or Medal.
16 " fat Cow " " " "
17 " fat Steer under 4 " "

Applicants for premiums on fat cattle must furnish particular statements of the manner of feeding, and kind, quantity and cost of food, and all the expenses of fattening, if they are other than grass fed.

HORSES.

Class I.—Imported Horses.

18 Best blood Stallion over 4 years old, $20 or Silver Cup.
19 " " brood Mare, " " 10 "

20 " Stallion, horse of all work, over 4 years old, $20 or Silver Plate.
21 " brood Mare, " " " " $10 or Sil. Plate.
22 " Stallion, draught, over 4 years old, $20 or Silver Cup.
23 " brood Mare, draught, " " 10 "

Class II.—Native Horses, (for all work.)

24 Best Stallion over 3 years old, $10 or Silver Cup.
25 " brood Mare with foal at her foot, over 3 years old, $10 or Silver Cup.

Draught.

26 " Stallion over 3 years old, $10 or Silver Cup.
27 " brood Mare with foal at her foot, over 3 years old, $5 or Medal.

Colts.

28 Best 1 year old Stallion, $5 or Medal.
29 " " Mare, Youatt on the horse

Geldings.

30 Best Gelding, $10 or a Cup.
31 2d best " Youatt on the horse.

SHEEP.

Class I.—Imported.

32 Best Merino Ram, $10 or a Cup.
33 " " Ewes, not less than two, Morrell's Shepherd.
34 " South Down Ram, $10 or a Cup.
35 " " Ewes, Morrell's Shepherd.
36 " Saxon Ram, $10 or a Cup.
37 " " Ewes, Morrell's Shepherd.

Class II.—Native and crossed between Imported and Native.

38 Best Native Ram, $5 or a Medal.
39 " " Ewes, Morrell's Shepherd.
40 " pen of Lambs, $5 or a Medal.
41 " sample of Wool, not less than 3 fleeces, a Silver Medal.
42 " Shepherd's Dog, $10 or a Silver Dog Collar.
43 2d best " Morrell's Shepherd.
44 Best pair of Terriers, $10 or a Silver Dog Collar.
Evidence to be furnished of the thorough training of the dogs, otherwise no premium can be awarded.

SWINE.

45 Best Boar, imported, $5 or a Medal.
46 " " native, " "
47 " breeding Sow, imported, $5 or a Medal.
48 " " native, " "
49 " lot of Pigs, not less than 5, under 10 months, $5 or a Medal.

POULTRY.

50 Best lot of Poultry owned by exhibitor, (statement to be furnished and verified by affidavit) $10 or Silver Cup.

51 Best pair of Dorkings, Silver Medal.
52 " " Black Spanish, "
53 " lot of Malays, not less than 3—1 cock and 2 hens, S. Medal.
54 " " Shanghais, 1 cock and 2 hens, Silver Medal.
55 " " Bantams, " " "
56 " " Turkeys, " " "
57 " lot Muscovy Ducks, 1 drake and 2 ducks, "
58 " lot small " " " "
59 " lot of Geese, Silver Medal.

DAIRY.

60 Best lot (quality as well as quantity considered) made from five cows in 30 consecutive days, 25 lbs. of the butter to be exhibited, $15 or a Cream Pitcher.
61 2d best, do. do., Silver Butter Knife.
62 Best 3 firkins butter, not less than 50 lbs. each, $10 or a Cup.
63 " 10 lbs. Butter, made at any time by a girl under 21 years of age, Set Silver Tea Spoons.
64 2d best by a girl under 21 years, Silver Butter Knife.

A statement of the manner of making the butter must accompany each sample.

CHEESE.

65 Best Cheese, over 10 lbs., $5 or a Medal.
66 2d best " Diploma.

SUGAR AND SYRUP.

67 Best 100 lbs. of Muscovado Sugar, an average sample of not less than 15 tons to be shown by affidavit of the competitor and one other person conversant with the facts, $20 or a Silver Goblet.
68 2d best 100 lbs., do. do., $10 or a Silver Cup.
69 Best 100 lbs. made by any process, refined or otherwise, $5 or a Medal.
70 " 20 gallons of Syrup, a fair sample of 20 bbls. (to be shown by affidavit) $10 or a Cup.

The process of manufacturing and clarifying must accompany the samples of sugar and syrup offered.

COFFEE.

71 Best 25 lbs. Coffee, a fair sample of at least 2000 lbs. $15 or a Silver Cup.
72 2d best 25 lbs. Coffee, a fair sample of at least 2000 lbs. $5 or a Silver Medal.

GRAIN, FLOUR AND SEEDS.

73 Best sample of Wheat not less than half bushel $10 or Silver Cup.
74 " 20 ears Indian Corn, $5 or Medal.
75 " bushel of " " "
76 " sample of Oats, not less than half a bushel, $5 or Medal.
77 " " Barley, " " " " "
78 " " White Beans, not less than 1 peck, " "

79 Best 200 lbs. Flour, $10 or a Cup.
80 " sample newly introduced grain, valuable to the farmer, not less than one bushel, Silver Medal.
81 " variety of Garden Seeds, raised on the islands, Silver Medal.

FIELD CROPS.

82 Best crop of Wheat, not less than 2 acres, nor less than 25 bushels per acre, $15 or a Cup.
83 " crop of Indian Corn, not less than 2 acres, nor less than 25 bushels per acre, $10 or a Silver Cup.
84 " crop of Barley, not less than 2 acres, nor less than 25 bushels per acre, $5 or a Medal.
85 " crop of Oats, not less than 2 acres, nor less than 25 bushels per acre, $5 or a Medal.
86 " crop of White Beans, not less than half an acre, $5 or a Medal.
87 " crop of Irish Potatoes, not less than 2 acres, $10 or a Cup.
88 " half acre Tobacco, with account of cultivation, " "
89 " 100 Cigars, a specimen of 10,000, $10 or a Cup.
90 " half acre Broom Corn, " "

Statements must be furnished by applicants for premiums on field crops, 1st. Previous crop, if any, and how manured. 2d. The quantity of manure on the crop, the manner of its application, the quantity and kind of seed used. 3d. A detailed account of the expense of cultivation. 4th. A sample of the product must be presented at the exhibition. 5th. The land must be measured and the Surveyor make an affidavit to his survey.

VEGETABLES.

91 Best and greatest variety of Vegetables, raised by the exhibitor, $10 or a Cup.
92 do. imported Sweet Potatoes, Bermuda or Carolina, $5 or a Silver Medal.
93 do. 10 heads of Kalo, - - $5 or a Silver Medal.
94 2d do. do. - - - $3 or a Book.
95 Best 12 stalks of Celery, - - - 3 do.
96 do. 12 heads of Cauliflower, - - - 3 do.
97 do. 12 white table Turnips, - - 3 do.
98 do. 12 Carrots, - - - - 3 do.
99 do. 6 table Beets, - - - - 3 do.
100 do. 12 Radishes, - - - - 3 do.
101 do. 12 Parsnips, - - - - 3 do.
102 do. 6 heads of Cabbage, - - - 3 do.
103 do. 5 do. Lettuce, - - 3 do.
104 do. 15 Tomatoes, - - - - 3 do.
105 do. bunch double Parsley, - - 3 do.
106 do. 2 Purple Egg Plants, - - - 3 do.
107 do. 12 Onions, (seedings) - - - 3 do.
108 do. 3 Squashes, - - - - 3 do.

109 Largest Squash or Pumpkin, - - - $3 or a Book.
110 Best bushel of Irish Potatoes, - - 3 do.
111 2d do. do. - - - 2 do.
112 Best do. Sweet Potatoes, - - 3 do.
113 2d do. do. - - - 2 do.

Discretionary premiums will be awarded on choice garden products not above enumerated.

FRUIT.

114 Best 12 Peaches, - - - - $5 or a Medal.
115 2d 12 do. - - - $3 or a Book.
116 Best dish of Grapes, - - - 5 do.
117 2d do. do. - - 3 do.
118 Best dish of Raisins, - - 3 do.
119 do. 12 Turkey Figs, - - - 5 do.
120 do. 12 of any other variety, - 3 do.
121 do. collection of Water Melons, not less than 5, - - 3 do.
122 do. specimen of any variety, 3 do.
123 do. collection of Musk Melons, 3 do.
124 do. specimen of any variety, 3 do.
125 do. 12 Oranges, - - - 3 do.
126 do. 6 Lemons, - - - - - Silver Medal.
127 do. bunch Bananas, - - 3 do.
128 2d do. do. - - 2 do.
129 Best 6 Mangoes, Downing's Fruit Culture.

Volumes of Downing's and Thomas' Fruit Culture will be awarded by the Judges in their discretion, for choice fruits not enumerated.

The fruit and vegetables exhibited for which premiums are awarded are to be at the disposal of the Society.

No person can receive but a single premium on the same fruit.

Any premiums may be withheld in the direction of the Judges, if the samples exhibited are not worthy of a premium.

FLOWERS.

130 Best collection and greatest variety of flowers, $10 or a Cup.
131 2d do. do. do. do. a Medal.
132 Best Floral Design, - - - Pair of Vases.
133 do. Boquet, - - - - Silver Boquet Holder.
134 For the most beautifully arranged basket of flowers, - - - - do. do.
135 Greatest variety of Roses, - - - do. do.

FARM IMPLEMENTS, ETC.

136 Best Plough for stiff sod, - - $5 or a Silver Medal.
137 do. Harrow, - - - - 5 do.
138 do. Cultivator, - - - 5 do.
139 do. Corn Sheller, - - - 5 do.
140 do. Ox Cart, - - - 5 do.
141 do. Ox Yoke, domestic manufacture, 5 do.

142 Best Churn, - - - - $5 or a Silver Medal.
143 do. dozen Brooms, domestic manufacture, 5 . do.
144 do. Grain Drill for drilling wheat, etc., 5 do.

DOMESTIC MANUFACTURES.

Articles exhibited to be the manufacture of the 12 months preceding the exhibition.

145 Best machine for cleaning coffee, $10 or a Cup.
146 do. 10 yards Woolen Flannel or woolen cloth of any kind, a Silver Medal.
147 do. 3 straw or grass Hats of native manufacture, $5 or Medal.
148 do. 3 Door Mats, do. do. 3 do.
149 do. 3 Table, Floor or sleeping Mats, do. 5 do.
150 do. pair of cotton knit stockings, - $5 or Diploma.
151 do. Linen Bosom Shirt, - - - 2 do.
152 do. Ornamental Needle Work, - - - - do.
153 do. Ottoman Cover, - - - - do.
154 do. Worked Cushion and Back, - - - do.
155 do. Variety of Worsted work, - - - do.
156 do, Worked Collar and Handkerchief, - - do.
157 do. 2 Lamp Stand Mats, - - - - do.
158 do. Ornamental Shell or Wax Work, - - - do.
159 Best and most beautiful Lamp Shade, - - do.
160 do. Bed Quilt, - - - - - - do.

Discretionary premiums will be awarded for articles not included in the above list.

Medals will also be awarded for articles of mechanical ingenuity, and machinery deemed useful.

In presenting the premium list for the exhibition in 1854, the Board of Managers would call the attention of the public to the numerous additions which have been made to the list of premiums, and which call for a large expenditure. Such changes and additions have been made as the experience of former years has suggested as important, and they trust such as will meet the approbation of exhibitors.

REQUIREMENTS FROM COMPETITORS.

All exhibitors, except ladies, and natives who are members of auxiliary societies, paying their subscription fees into the parent Society, must become members of the Society, in order to take a premium, and must have their articles and animals *entered on the Secretary's Books, not later than* TUESDAY, JUNE 8th, 1854.

All articles for exhibition must be delivered to the committees appointed for the reception and arrangement of articles as early as Wednesday morning, 9 o'clock, A. M., except flowers, which will be received until 10, A. M.

Horses and all other animals must be brought to the ground as early as 10½, A. M.

Persons intending to exhibit are specially requested to forward their entries to the Secretary at the earliest date possible, as it will

greatly facilitate the business of the show and the making of the preliminary arrangements necessary thereto.

Articles or animals removed from the ground before the close of the exhibition, (except by permission of the President) cannot receive a premium though awarded.

Articles and animals will be numbered as they are received, and not labeled as heretofore, and prize cards or flags will be attached to the successful articles or animals immediately after the decision of the Judges.

INSTRUCTIONS FOR THE JUDGES AND SUPERINTENDENTS.

The Judges will meet on the grounds precisely at 11 o'clock, on Wednesday, receive the lists of entries, and then proceed to decide upon the merits of the different articles and animals submitted to them, reference being made to the numbers affixed to each.

A Superintendent will attend each set of Judges, point out the different articles and animals to be examined, and attach prize cards or flags to the successful articles and animals.

The Judges will report not only the animals entitled to premiums, but also those *next in merit* in each class, to meet the contingency of any objection that may be made to the awards. They will also report any animals which in their opinion deserve special commendation.

In all articles on exhibition where competition is not made, the Judges *shall withhold premiums*, unless the article is of such superior merit as to be entitled to the award.

In all cases the *Diploma* of the Society is to be awarded ONLY *as evidence of* SUPERIOR MERIT.

Animals, implements and articles which have heretofore received the first premium of the Society may be allowed to compete, and if adjudged superior to any other on exhibition, will be awarded the *Certificate* of the Society to that effect, or the Diploma of the Society, at the option of the exhibitor.

STANDING COMMITTEES FOR 1854.

1. On Sugar.—R. W. Wood, J. F. B. Marshall, L. L. Torbert, Wm. A. Aldrich, H. Hackfeld.
2. On Producing Seed from the Sugar Cane.—E. P. Bond, D. Baldwin, A. B. Bates, T. Cleghorn, J. W. Austin, B. Pitman.
3. On Coffee.—R. C. Wyllie,. B. Pitman, P. Cummings, G. Rhodes, S. Reynolds, T. C. B. Rooke.
4. On Wheat, Oats, &c.—John T. Gower, J. S. Green, J. S. Emerson, H. J. G. Croswell.
5. On Indian Corn.—Wm. Reynolds, W. H. Rice, R. J. Hollingsworth, J. Dudoit, W. Chamberlain.
6. On Horticulture.—G. P. Judd, E. Bailey, E. G. Beckwith, J. Montgomery G. H. Luce.
7. On the Vine.—J. Montgomery, A. Adams, H. M. Whitney, G. D. Gilman, Wm. Ap Jones, T. E. Taylor.
8. On the Fig.—J. S. Emerson, W. H. Rice, J. Pikoi, W. P. Alexander, C. R. Bishop.
9. On Fruits and Fruit Trees.—E. P. Bond, D. Baldwin, A. B. Bates, T. Cleghorn, W. Webster, H. Rhodes.
10. On Trees for Shade, Timber, Wood, &c.—Wm. Miller, Kamehameha, G. P. Judd, Em. Perrin, T. Metcalf.
11. On Garden and other Seeds.—L. L. Torbert, S. C. Damon, H. M. Whitney, W. B. Rice, D. Adams, P. Manini.
12. On Taro and Garden Vegetables.—R. Armstrong, A. Adams, G. L. Kapeau, A. Paki, P. J. Gulick.
13. On a Public Nursery.—T. E. Taylor, S. C. Damon, C. C. Harris, S. P. Ford, H. Robinson, John Young, H. T. Fitch.
14. On Floriculture.—E. G. Beckwith, W. Hillebrand, E. Hoffman, T. Cleghorn, R. Armstrong, C. H. Judd.
15. On Irish Potatoes.—G. D. Gilman, A. Bishop, L. L. Torbert, John Richardson, E. Bond.
16. On the Sweet Potato.—C. R. Bishop, J. Ladd, Geo. Gilmore, P. Nahaolelua, L. S. Ua, E. Kaahalama.
17. On Onions.—E. Bond, L. L. Torbert, B. Pitman, G. Graham, S. Laanui.
18. On Arrow Root and its Manufacture.—B. Pitman, C. B. Andrews, Geo. Gilmore, E. Johnson, S. Reynolds.
19. On Neat Cattle.—C. G. Hopkins, A. F. Turner, J. Meek, Wm. Sumner, G. S. Kenway, J. Robinson.
20. On Horses.—John Meek, T. Cummins, J. I. Dowsett, H. S. Howland, F. Manini.
21. On Sheep.—R. Moffitt, Wm. Webster, T. Cummins, J. O. Dominis, D. Adams.

22. On SWINE.—C. B. Andrews, J. Meek, R. Moffitt, R. J. Hollingsworth, A. Paki.
23. On POULTRY.—H. M. Whitney, J. Piikoi, J. H. Brown, S. C. Damon, J. S. Emerson, H. G. Crabb.
24. On the HONEY BEE.—W. Chamberlain, O. H. Gulick, J. M. Smith, C. R. Bishop, E. Bailey.
25. On BIRDS, INSECTS, WORMS, &c.— W. Newcomb, Wm. Reynolds, J. S. Emerson, J. S. Green, L. Andrews.
26. On BUTTER AND CHEESE.—A. F. Turner, J. S. Emerson, C. B. Andrews, A. Bishop, H. Sea.
27. On TOBACCO.—A. Archer, J. R. Opitz, R. Clouston, A. Fornander, J. Montgomery, B. F. Snow, J. Pitman.
28. On SEASONS.—T. Coan, E. G. Beckwith, J. S. Green, W. H. Pease, S. G. Dwight, S. Hoffmeyer, H. J. Holdsworth.
29. On FENCES.—J. F. B. Marshall, Wm. Miller, R. G. Davis, I. R. Mitchell, Wm. Webster.
30. On the OLONA, OR NATIVE HEMP.—S. M. Kamakau, J. L. Reeves, Lilikalani, J. Kekaulahao, J. W. E. Maikai.
31. On MANUFACTURES.—J. H. Wood, R. A. S. Wood, C. H. Lewers, J. F. B. Marshall, J. Hardy, Geo. McLean.
32. On MACHINERY AND AGRICULTURAL IMPLEMENTS.—D. M. Weston, J. S. Green, R. W. Wood, J. S. Harding, R. Armstrong, W. H. Johnson, J. Hatcher.
33. On AGRICULTURAL & COMMERCIAL STATISTICS OF THE ISLANDS.—S. N. Castle, B. W. Field, W. Goodale, G. D. Gilman, B. Pitman, E. P. Bond, M. C. Monsarrat, A. G. Thurston.
34. On ROADS AND INTER-ISLAND NAVIGATION.—Wm. Webster, G. M. Robertson, E. P. Bond, J. Montgomery, D. P. Penhallow, B. F. Snow, R. W. Holt, Stephen Bailey.
35. On LABOR AND THE POPULATION OF THE ISLANDS.—Liholiho, J. M. Marsh, G. M. Robertson, Wm. P. Alexander, T. Coan, J. F. B. Marshall, B. F. Hardy, John Ii.
36. To RECEIVE AND ARRANGE ARTICLES FOR THE FAIR OF 1854.—W. C. Parke, T. H. Marshall, H. Rhodes, F. L. Hanks, C. S. Bartow, I. Bartlett, T. Spencer, W. K. Snodgrass, J. Ladd, J. R. Pratt, D. N. Flitner.
37. On SALT.—E. W. Clark, C. W. Vincent, T. Mossman, R. Coady, J. C. Pfluger, H. Dimond.
38. On ANALYSIS OF THE SOIL.—W. H. Pease, E. Perkins, W. Newcomb, J. M. Marsh, G. E. Beckwith.

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Judd, G. P.

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Luce, G. H.

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